Science Library JAN 9 1948

Rocks and Minerals

Official Journal of the Rocks and Minerals Association

A Magazine for Mineralogists, Geologists and Collectors

December, 1947

35c

Vol. 22, No. 12 *Whole No. 197*

18th LIST OF FINE MINERALS

DIOPTASE, Guchab, S.W. Africa. Xld. on rock. 3 x 2 ..... $ 5.00
BEMENTITE, Franklin, N. J. Xlline. plates in mass. 3½ x 2 x 1½ 6.00
APATITE, Ontario. Very good doubly term. red and green xl. 1¾ x 1½ 2.00
ALMANDITE, Salida, Col. Xl. coated w. Aphrosiderite. 1¾ x 1¾ 1.50
ARSENIOSIDERITE, France. Good radiating xlline. mass. 2 x 1½ x 1½ .. 2.50
QUARTZ, New York. Two "Herkimer Diamond" xls. in rock. 3 x 1½ .. 2.50
APOPHYLLITE, Paterson, N. J. Glassy xls. in part green, very good. 3 x 3 3.00
MOTTRAMITE, Tsumeb. Botryoidal mass. 3½ x 2 x 1½ 3.00
APATITE, Greenwood, Me. Fine lilac tabular xls. in rock. 3 x 2 ..... 5.00
SMITHSONITE, Tsumeb. Xld. in stalactitic form, yellowish. 2¾ x 2 .... 2.00
DIASPORE, Chester, Mass. Good lilac and grey xls. on rock. 4 x 3 ..... 5.00
ESSONITE, Ala. Small brilliant xls. w. Diopside, etc. on rock. 3 x 2 ..... 4.00
NEPHELITE v. ELAEOLITE, Ilmen Mts., Russia. Xlline. mass. 4 x 2½ .. 2.50
MANGANITE, Harz Mts. Well xld. 3 x 3 x 2 ..... 10.00
CALEDONITE, Leadhills, Scotland. Minutely xld. w. Linarite in rock. 2 x 2 ..... 6.00
VESUVIANITE, Vesuvius. Good xls. in rock. 2½ x 1¾ 2.50
SMITHSONITE, Kelly, New Mexico. Xld., fine blue color, on rock. 4 x 3 .. 7.50
PYRITE w. RHODOCHROSITE, Alicante, Colorado. Very attractive. 3 x 3 . 3.00
CASSITERITE, La Villeder, France. Group of twin brown xls. 2 x 1¾ 3.50
COPPER enclosed in xld. CALCITE on rock, Michigan. 4 x 3 x 2½ 5.00
FLUORITE, Cumberland. Twin lilac xls. w. Ankerite. 2½ x 2 ..... 2.50
DUFRENITE, Midvale, Va. Good xlline. fibrous mass. 3½ x 2¼ 3.00
BARYTOCALCITE, Cumberland. Xld., xls. coated w. micro. xld. Barite. 3½ x 2¼ 2.50
CHABAZITE, Aussig. Well xld., white, on rock. 3½ x 2½ 2.50
PSEUDOMALACHITE (LUNNITE), Germany. Xld. and xlline. in rock. 2½ x 2½ 3.50
WAVELLITE, Bolivia. Xld., greyish, in rock. 4 x 2½ x 2 ..... 3.00
BISMUTH, Cornwall. Xlline. masses in rock. 2½ x 2¼ x 2 ..... 3.00
FLUORITE, Wölsendorf. Group of dark purple xls. 4 x 2½ 4.00
AMBER, Prussia. Deep yellow mass. 2 x 1½ 2.00
QUARTZ, St. Gothard. Group of xls. in parallel position. 4½ x 2½ 3.50
CRONSTEDTITE, Kisbanya. Xld. w. SPHAEROSIDERITE on rock. 3 x 2½ 7.50
ROSCOELITE, Colorado. In sandstone. 3 x 2½ 2.00
ZINCITE, Franklin, N. J. Crude xls. in mixed ore. 2½ x 2½. Xl. 1". .. 10.00
CHALCOPHANITE xld. w. HETAEROLITE, Sterling Hill. Very good. 3 x 2½ x 2 ..... 5.00
CERVANTITE, Ateca, Spain. With some Stibnite. 4 x 2 ..... 2.00
CELESTITE, Yate, Gloucestershire. Well xld. in mass. 4 x 2 x 2 ..... 3.00
COLUMBITE, Hot Springs, New Mexico. Good ⅞" xl. 1.25
SAMARSKITE xl. in parallel growth with COLUMBITE, Brazil. 1¼". 3.00
AMPHIBOLE. EDENITE, Franklin, N. J. Group of crude brown xls. 4 x 2½ 2.50
DIOPSIDE v. MALACOLITE, Sparta, N. J. Green xls. in Calcite. 3½ x 1½ 2.00
AXINITE, Franklin, N. J. Good deep yellow xlline mass. 2 x 2 x 1¼ 3.00
PYROMORPHITE, Ems, Germany. Very good gray xls. in matrix. 3½ x 3 ..... 6.00
BARITE, Felsobanya. Group of large tabular yellowish xls 7 x 2 x 2½ .. 7.50
BOULANGERITE, Washington. Fibrous xlline. mass w. Quartz. 3½ x 2 .. 3.00
BRUCITE, Texas, Pa. Fine xlline. mass, fl. blue under LW. 6 x 4 ..... 3.50
SCHEELITE, Kern Co., Cal. Very good colorless translucent xl. ⅞". 4.00
CHALCOPYRITE, French Creek, Pa. Skeletal xls. w. octahedral Pyrite xls. on rock. An "old timer". 3½ x 3 ..... 3.00
KERMESITE, Hungary. Xld. in rock. 3 x 1½ 2.50

HUGH A. FORD

OFFICE AND SHOWROOM: 110 WALL STREET NEW YORK 5, N. Y.

Telephone: BOwling Green 9-7191

No lists furnished, but enquiries for specific minerals welcomed.

ROCKS and MINERALS
PUBLISHED MONTHLY

Edited and Published by
PETER ZODAC

December
1947

Contents for December, 1947

CHIPS FROM THE QUARRY 1102
OUR REPORT FOR THE SUMMER OF 1947. *By E. Lawrence Sampter* 1103
DISPLACED MINERALS. *By J. C. Boyle* 1106
HERBERT M. W. HAVEN HONORED BY COLBY COLLEGE 1107
NOTS ROCKHOUNDS HAVE A COLORFUL HISTORY.
By Clark Harrison 1108
ROCK CRYSTAL LOCALITY NEAR FONDA, N. Y. *By Peter Zodac* 1111
BRUCE MINES REGION OF ONTARIO, CANADA.
By Joseph A. Mandarino 1112
GEM TRADE LABORATORY REPORT ON LINDE SYNTHETIC STAR RUBIES AND SAPPHIRES 1113
JADE IN CALIFORNIA. *By R. F. Henley* 1114
MOSS OPAL MINE IN WESTERN NEBRASKA. *By Richard Mitchell* 1115
FOSHAG ON PARICUTIN. *By Charles A. Belz* 1116
A CORRECTION ON CALIFORNIA GARNET. *By Hatfield Goudey* 1118
FULGURITES AND PHYSIOGRAPHICAL MEMORANDA OF SAN CLEMENTE ISLAND, CALIF. *By M/Sgt. John O. Griesbach* 1119
GEM VILLAGE ROCK SHOW. *By L. M. Shipley* 1121
PALA FIELD TRIP. *By E. R. H.* 1122
THE MINERALS OF DERBYSHIRE. *By N. W. E. Lee* 1123
VANADIUM IN CHERT. By *G. Elmo Shoup* 1124
A NATURAL MICRO MUSEUM DISPLAY. *By Howard V. Hamilton* 1125
WORLD NEWS ON MINERAL OCCURRENCES 1126
BIBLIOGRAPHICAL NOTES 1130
CLUB AND SOCIETY NOTES 1131
ROCKS AND MINERALS ASSOCIATION 1140
INDEX TO ADVERTISERS 1196
GENERAL INDEX OF AUTHORS AND CONTENTS FOR 1947 1197

Entered as second-class matter September 13, 1926, at the Post Office at Peekskill, N. Y., under the Act of March 3, 1879
Copyright 1947 by Peter Zodac Title registered in U. S. Patent Office

Specially written articles (as contributions) are desired.
Subscription price $3.00 a year; Current numbers, 35c a copy. No responsibility is assumed for subscriptions paid to agents and it is best to remit direct to the Publisher.
Issued on the 25th day of each month.
Authors alone are responsible for statements made and opinions expressed in their respective articles.
ROCKS and MINERALS PEEKSKILL, N. Y., U. S. A.

The official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

National Dealers Association Abandoned

Due to the lack of finances sufficient to carry on an advertising campaign necessary to stimulate general interest among the dealers, it has been decided to abandon further efforts.

Thus, The National Mineral Gem and Lapidary Dealers Association is dissolved, and the proposed dealers show which was to have been held in San Bernardino, Calif., Feb. 6, 7, 8, 1948 has been cancelled.

Edw. Lang

J. J. Jewelcraft 1948 *Catalog*

This large and very interesting catalog came out in October and a copy should be in the hands of every collector and cutter, especially the latter. It is chuck full of attractive offerings covering lapidary equipment and supplies, jewelry accessories and supplies, blowpiping supplies, Mineralights, books, magazines, etc.

The catalog is 8¼ x 10½ inches in size, contains 36 pages with a large number of good illustrations, and sells for 20c a copy. Order your copy TODAY from J. J. Jewelcraft, 915 E. Washington St., Pasadena 6, Calif.

Lovely Minerals! Lovely Rocks! Lovely People!

Editor R. & M.:

I wonder if minerals and gem stones and rocks aren't made so lovely so that only lovely people would care to collect them! I expect there are the other kind too, but all I've had any dealing with have been exceptionally nice. I've ordered gem material from a number of your advertisers and I think every one sent at least a little extra weight and some more than a little.

Mrs. Ethel C. VanKirk
West Newton, Penn.

November 22, 1947

Rockhounds Do Travel

Editor R. & M.:

We have just returned from an automobile trip of 28,400 miles, lasting 15 months. We sent home several hundred pounds of fine minerals. Our Rocks and Minerals Association membership card was a great help and by means of it we met some very nice people.

Earle H. Potter
Rochester, N. Y.

November 6, 1947

Dr. Barlow Returns to Egypt

Dr. Claude H. Barlow, of Cairo, Egypt, who was on a brief visit to New York, has returned to Egypt. He left New York City on September 17th, by TWA plane. Dr. Barlow is an American in the employ of the Egyptian government.

Dr. Barlow has spent many years in Egypt and is an authority on the minerals of that country, especially on its agates, jaspers and petrified wood.

Two very interesting articles of his have already appeared in *Rocks and Minerals* and he may send us another one, on the turquoise mines of the Sinai Peninsula. The turquoise of Egypt is among the finest known.

Branham Sells Jade to U.P.R.R.

Allan Branham, the jade dealer from Lander, Wyo., has sold to the Union Pacific Railroad a fine 27 pound block of jade. He has also sold them the idea of featuring collecting. The Union Pacific is thus the first railroad in the United States to call attention of its passengers to the many interesting mineral localities, especially those noted for semi-precious gem minerals, which occur along its many lines. The company now has a display of minerals in its main office—in Omaha, Nebr.

Tilly Foster Mine Open to Collectors

Editor R. & M.:

The writer purchased the Tilly Foster Iron Mine property in 1945 from Ralph Morgan, and you and your subscribers are welcome any time to visit or look for samples or specimens of ore. It might be well to warn them to be careful and not fall in the old mine pit as the water is about 700 feet deep.

I read with interest sometime ago the article about various minerals at Tilly Foster in your October, 1938, issue written by Mr. John Trainer, and collecting must be a very interesting hobby.

A. G. Wynkoop, President
Tilly Foster Products Corp.
Tilly Foster, N. Y.

August 13, 1947

Editor's Note: We are grateful to Mr. Wynkoop for his gracious permission and we hope our many subscribers will take advantage of it to visit the famous locality. Attend strictly to collecting, however, and do not meddle with any apparatus or machinery which may be on the property. Remember you are a guest of Mr. Wynkoop and so behave yourself accordingly so as to give him no cause for regretting the permission given us. Tilly Foster, a little hamlet on U.S. 6, is about 2 miles northwest of Brewster, in southeastern New York.

ROCKS and MINERALS

PUBLISHED MONTHLY

Edited and Published by PETER ZODAC

DECEMBER 1947

OUR REPORT FOR THE SUMMER OF 1947

BY E. LAWRENCE SAMPTER

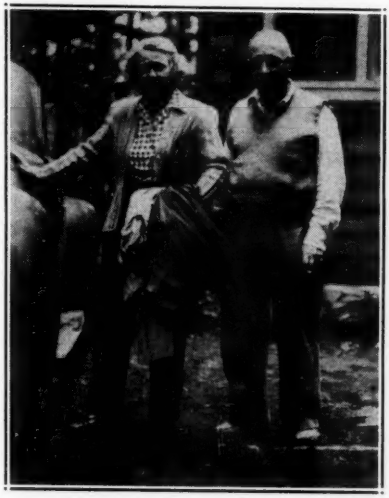
(49 W. 45th St., New York 19, N. Y.)

DELIVERED BEFORE THE N. Y. MINERALOGICAL CLUB

This 1947 Summer was the most active mineralogical one my wife and I ever experienced. We visited 22 quarries in Maine, New Hampshire, Connecticut and New Jersey, 41 different times—visited 3 museums, 12 mineral dealers, and were with about 25 enthusiastic mineral collectors, at various times.

Our most active collecting was confined to 4 working quarries, which we frequented often and from which I have cartons of specimens, still to be opened and catalogued.

My friend, Joe Petchnic—the lone miner of the quarry on the Roy Wardwell farm in Albany, Maine—blasted every few days and produced plenty of nice beryl, but as usual, only broken crystals; also beautiful pale rose quartz, black tourmalines with shiny faces and terminations, and others of the usual pegmatite minerals. I found one piece of an 18-sided beryl there too. After about six years work, feldspar finally ran out and Joe and his two sons have recently opened a new pegmatite vein on the Stearns farm, where they have good spar, for the United Company, but so far no crystals for collectors. Went to this new opening several times with our fellow member, Mr. Gutman, and it looks like a good locality for next season, when they will have opened more ground and perhaps struck some good pockets.



Mr. and Mrs. E. Lawrence Sampter—the Beryl Hunting Pair.

Lord's Hill, Maine

Lord's Hill, near Kezar Lake, in Oxford County, Maine, made famous years ago by Kunz, seeking topaz, was blown wide open by the Whitehall Company and is a collector's paradise. Clear and black quartz crystals, zircons, beryl, mica, autunite, sphalerite, feldspars, massive topaz, fluorite, etc., are all to be found there in abundance. Work ceased there now too. They produced about 200 tons of spar, which was left there to be called for at some future date. A rough truck road was built up to the quarry, which takes about 45 minutes to walk, each way. The miners are now back working other sites near Rumford, Maine.

Many collectors were up on Lord's Hill this summer, and some of them with very bad collectors' manners, which nearly forced the company to close their mine to all intruders. For the benefit of us all, which most real mineral collectors know, the following rules of mine etiquette should be strictly adhered to:

Don't interfere with workmen during working hours at quarries.
Don't leave papers and lunch debris all over the place—good miners pride themselves on clean mines.
Dont' touch or use miners' tools.
Don't take specimens out of special boxes, or locked sheds—they are somebody else's private property.
Don't take specimens apparently piled up by some other collector, or miner, unless certain that they have been abandoned.
Don't destroy specimens you do not want—some other collector might be glad to get them.
Don't carelessly, or intentionally, leave specimens of one quarry in another.
Another final warning — don't lift heavy rocks incorrectly. I did at Paterson and as a result was confined to my bed for a week with a strained back.

Mt. Newry, Maine

We climbed Newry for our annual Labor Day visit. It was the first cool day of a record breaking heat wave this summer in Maine, and eleven other collectors were on top to greet us. Naturally got more of those well known tourmalines, etc., of which there are still plenty buried for all, as well as some still unidentified and perhaps new microscopic minerals.

Noyes Mountain, Maine

Noyes mountain also still has plenty of beautiful small quartz crystal groups, tourmalines, purple apatites, etc. Many collectors were there this season and the place really shows that much rock has been taken away by visitors to this famous Harvard quarry. Lepidolite, which was once so plentiful there, is now almost completely gone. On one trip we had the pleasure of meeting some people and their grandson, from Wallingford, Vermont, who came there because they read my previous article in *Rocks and Minerals*. Heard of some and met several collectors who were following my suggestions of past years, who I know had good results and enjoyable trips, thanks to their close attention to *Rocks and Minerals* articles.

Roads Paved with Crystals

Mr. Yedlin wrote about roads paved with garnets at Roxbury, Conn. We found the road up Lord's Hill paved with clear and black quartz crystals and also discovered that some of the roads near Conway, New Hampshire, were filled in with microcline and black quartz crystals too. After some detective work we located the man who did the job and the source of this road fill, which my wife suspected to be and was, Lovejoy Pits, near Conway, N. H. Went there twice and reaped our reward in many fine specimens.

Other Localities Visited

Saw the Bumpus mine again, which is still not being worked, but has good prospects of being operated soon.

Also had fun gold panning in Maine, without success, but am still optomistic about this and believe I have a good location to pan, at some future date. Were at Roxbury, Conn., with the club and again with Mr. Lisle and also at West Redding, Conn., for more garnets, with Mr. Yedlin, which he wrote about in his article in the September issue of *Rocks and Minerals*. Also had a very productive day at Paterson, N. J., basalt quarries with Mr. Lisle and Mr. Tillinghast, during which time three blasts were set off, producing beautiful specimens of the usual, well known, zeolites.

Palermo Feldspar Quarry

The most exciting and interesting quarry visited was Palermo at North Groton, New Hampshire, which is being worked by the genial and friendly Mr. H. A. Ashley and his crew of six miners, for spar and beryl, both of which they mine by the carload to sell and not for collectors to walk off with.

Mr. Ashley is most cooperative to serious collectors and experts and is interested in giving professional mineralogists all of his assistance. The excitement was caused there by the very recent discovery of a large pocket containing our Dr. Pough's new mineral of 1946—Brazilianite. This quarry also has many rare and as yet some unidentified phosphate minerals. Palermo is being studied and written up by Prof. Clifford Frondel of Harvard and Prof. C. W. Wolfe of Boston Universities, whom we had the pleasure

of meeting there on our first trip with our Mr. Lisle.

Our generous host in New Hampshire was Paul Burroughs of Laconia. Mr. Burroughs is president of the N. H. Mineral Club and a most active and enthusiastic collector and cutter of gem stones made from local N. H. minerals His club has an active plan to have a fine museum of only N. H. minerals, for which they have numerous and varied specimens already collected. We made one trip to Palermo with Dr. Pough and had the pleasure of being with several N. H. collectors including our own club member, Mr. D. Ellis Lit and his jeep, of N. Campton, as well as Frank Leggett and Charles Weeks of Meredith, all of whom have very fine collections of local minerals. Mr. Weeks has most of the crystal specimens mined at Lord's Hill for sale too. New Hampshire has recently produced some of the finest beryl crystals and gem material I have seen from any place, outside of Brazil.

Colony Mine

The most awe-inspiring quarry we saw was Fred Allen's Colony mine at Alstead, N. H. We found no collector's crystals of note there, but the sight is worth the visit. It is a tremendous hole in the ground, with a huge mountain of dump and a very large tunnel at the bottom. Probably one of the largest feldspar quarries in the country and a clean, well planned mining operation. A good, but steep road runs up to the quarry.

Amherst and Yale Collections Seen

Visited the Amherst College mineral collection (Amherst, Mass.) which has been just moved to their new museum building and is being arranged and cared for by one of the Schortmann brothers, as curator, under the supervision of Prof. Bain. We had the pleasure of meeting them both there during a terrific thunder storm. Also saw the Yale collection (New Haven, Conn.), in their Peabody museum, on our way home.

Mineral Dealers Visited

Paid our annual calls on Bickford, in Norway, Me., Howard Irish and his family, and Charles Marble in Buckfield, Me., Ike Skillin in Freeport, Me., and Schortmann's in Easthampton, Mass.—and of course Stanley Perham in West Paris, Me.

Perham is busy as ever and always improving and enlarging his mineral shop. He had a half page write-up in the Sunday *Boston Herald* of July 6, telling all about his career and success with local problems and minerals. Customers drive up daily for Maine minerals and his helpful advice on where to dig and what to look for. He now issues a series of about 10 printed maps and instructions, telling collectors how to get to various quarries, in detail, and what minerals are to be found there.

Herbert M. W. Haven Visited

Herbert M. W. Haven—while still the "Candy King" of Portland, Me.—had the honor, on June 30, of having the degree of Master of Science conferred on him, by Colby College. He was our host on the hottest day in the history of Portland. He is the founder of the Maine mineral club and its most active collector and naturalist. Haven collects only "God made specimens—not man made objects", as he puts it. Has a very large and fine collection of Maine minerals, which he is glad to show fellow collectors, as well as collections of pressed flowers and ferns, snakes, skulls, stuffed animals and birds of Maine, etc. He is a true naturalist and student of all products of nature. I enjoy seeing how other collectors keep their specimens and to learn the best points from each one. Mr. Haven has different colored labels, so that one can tell at a glance which state, quarry, etc., each different specimen comes from. This I find is an excellent system.

Schortmann's Visited

Schortmann's at Easthampton, Mass., have a larger and better stock than ever and as always very well arranged and displayed. Was able to obtain a few more locality specimens for my own specialized collection of beryl and beryllium minerals, on which I am now working.

Hugh A. Ford Visited

So to end a most active summer we concluded by purchasing more fine spe-

cialty items from our Mr. Ford's well known shop at 110 Wall St., New York City.

Collecting is Lots of Fun

It is still true that collecting is lots of fun and good healthy outdoor work, as well as educational in learning the paragenesis of minerals. It also makes one appreciate good specimens, when one sees how the miners' blasts ruin the fine collectors' items. The best are still obtained by the "silver pick" method, or from the miners' boxes and complete clean crystal specimens—one soon learns—are well worth what the dealers ask for them.

So crystallized our 1947 Summer in this report.

REFERENCES

Another mineralogical vacation in Maine, by E. L. Sampter, *Rocks and Minerals*, December 1945, pp. 594-595.

My mineralogical activities (summer of 1946), by E. L. Sampter, *Rocks and Minerals*, November 1946, pp. 743-746.

DISPLACED MINERALS

BY J. C. BOYLE

When the French Creek Mine, at St. Peter's, Pa., closed down in 1928, a bountiful source of fine specimen material passed from the list of producers. For this locality was a prolific producer of pyrite, magnetite, byssolite, and chalcopyrite, specimens of which have added to the beauty and interest of collectors' cabinets far and wide.

Moreover, a couple of years before this event, the opening of deeper parts of the ore body had begun to furnish excellent specimens of crystallized green calcite, and apophyllite, both white and green, the white being fluorescent on the c face. The output of these species, then new to the locality, had quickened interest and engendered the hope of yet more magnificence to come.

Suddenly, after a total production of over 900,000 tons of magnetite, the iron mine was abandoned, the ore being almost exhausted and operations having become too hazardous for continuance. Its closing cast a cloud over the rosy hopes of members of the Philadelphia Mineralogical Society, of which I was—and still am—a member.

Shortly after, walking along Market St. near the center of Philadelphia, I chanced to glance into the window of a barber shop which occupied one of those very narrow, but deep stores often utilized for that purpose. The proprietor of the shop had rented the front to a hat cleaner whose apparatus spun in the store window.

In this window my eye caught sight of something that abruptly halted my 'flight'. I stopped to look—and my breath momentarily caught—for I could scarce believe my eyes when 'something' turned out to be a fine specimen of French Creek apophyllite about 8" x 8", the crystals completely covering the surface.

When I had re-overed my balance and felt I could act with due restraint, I stepped inside and asked what the stuff was. "Boss away—he's stuff—I don't know." "When will he come back?" said I. "Soon, maybe coupla hours." Full of agitation, and hoping no other initiate would beat me to it, I made off and returned later. The stuff was there—and the boss was back.

I inquired where he had gotten the stuff,—a friend at French Creek had given it to him a week before. "Sell?" "Yes." "How much?" 'Three dollars." In five minutes he had packed the specimen and more than a dozen others of various sizes and I paid the three dollars. With my burden, I turned the corner and a few hundred feet away, met several other members of the Philadelphia Mineralogical Society at an office where one of them worked. We had agreed to meet here, proceed to dinner, and then to the regular monthly meeting of the Society that evening. If you recall that the mines had only recently closed you may catch something of the 'dumfounderment' that struck the "gang" when I exhibited the momentary resurrection of a buried hope.

Two thirds of the booty still reposes in my collection, but the third of lesser quality brought $21.00. Often, as I've recalled the incident of the little barber shop, I've thought to myself—'What a close shave'.

HERBERT M. W. HAVEN HONORED BY COLBY COLLEGE

Herbert M. W. Haven, of Portland, Me., one of Maine's foremost mineralogists and naturalists, was honored on June 30, 1947, when he received the degree of Master of Science from Colby College of Waterville, Me. This honor was conferred on him for his many years of active collecting, research, and active support of scientific institutions in his state.

Mr. Haven has a huge collection of Maine natural history specimens which include minerals, ferns, flowers, snakes, skulls, stuffed animals and birds, etc., etc. He founded the Maine Mineralogical and Geological Society and is its most active member.

In 1930, when *Rocks and Minerals* issued a Special Maine Number, it was Mr. Haven who made it possible. His interest, enthusiasm, and cordial support brought out the Special Maine Number which was directly responsible for the amazing growth of mineral clubs and societies as we know of them today. For the Special Maine Number had been prepared by members of the Maine Mineralogical and Geological Society, of which Mr. Haven was then President, and it included a history of the club and a group picture of its members. This issue created considerable interest among collectors and had a wide circulation throughout the west. The many letters received from collectors desiring names and addresses of R. & M. A. members in their localities for the purpose of forming clubs similar to the Maine Society attested to the interest. The first club to be formed was the Southern California Mineralogical Society which was founded on June 23rd, 1931, by John A. Renshaw, who became its first president (*Rocks and Minerals*, September 1931, p. 140). Mr. Renshaw made a fine president and under his leadership and guidance, the club grew rapidly and now it is one of the largest and most influential in the country. Other clubs soon made their appearance throughout California, Oregon and other states until now they are springing up like mushrooms all over the country. One cannot help but wonder where mineral collecting would be today, if the Special Maine Number had never been issued? We feel that that issue has done wonders for mineral collecting and the grateful thanks of *Rocks and Minerals* and its Editor are extended to Mr. Haven (a member of the R. & M. A. since September 8, 1926).

The text of the degree is as follows:

HERBERT M. W. HAVEN, amateur scientist whose thirst for knowledge has kept you a diligent student of nature in the midst of a business career, you have become known throughout the state of Maine as one whose contagious enthusiasm for learning has inspired a similar interest in others. Active supporter of the Portland Society of Natural History, Member of the Josselyn Botanical Society, Associate of the American Ornithologists Union, former President of the Maine Mineralogical and Geological Society, Charter Member and President of the Maine Microscopy Society, recognized for your work in photographing birds, esteemed equally for the excellence of your mineralogical collection and for the generosity with which you have disposed of parts of it to encourage beginners in the field, Colby College honors your achievements as the more remarkable because the educational resources on which you have relied have been so largely supplied by your own eager zeal.

By the authority of the Board of Trustees of Colby College I confer upon you, HERBERT M. W. HAVEN, the degree of MASTER OF SCIENCE, HONORIS CAUSA.

The hood with which you have been invested and this diploma which I place in your hand are the visible symbols of your membership in this society of scholars, to all the rights and privileges of which I declare you entitled.

June 30, 1947

Best Magazine Out

Editor R. & M.:

Enclosed is my renewal for another year for what I consider the best mineral magazine out. The past year has been exceptionally interesting.

Herbert E. Walters,
Ramona, Calif.

November 7, 1947

NOTS ROCKHOUNDS HAVE A COLORFUL HISTORY

BY CLARK HARRISON
(West Coast Correspondent for **Rocks and Minerals**)

Time once was when only a few Indians crossed the drifting sands of Indian Wells Valley. Then came the white man—scouts, hunters, bandits, miners and prospectors, adventurers and ranchers. Trails turned into ribbons of highways. Towns sprung up and the Valley became a place of civilization. It took the forty-niners weeks of hardships, privations and hazard to cross Death Valley and the Mojave Desert, but today modern towns adorn the highways and it is only a matter of a few hours by auto or train.

In the fall of 1943 the area for the present big Naval Ordnance Test Station (NOTS, from its initials) was surveyed and the base took shape the following year. The location is in the Indian Wells Valley, a closed basin plain or valley in the Mojave Desert, about 15 by 20 miles in extent, and hemmed in on nearly all sides by mountains. The base is some 8 miles east of the little desert town of Inyokern, and approximately 165 miles north of Los Angeles, California.

By 1945 NOTS was a very busy place, with hundreds of people working and living there. However, it is hard to get workers on the desert, and difficult to keep them there—because of the rigors of the climate (blazing heat of summer and the icy cold of winter), sand and dust storms, lack of housing, and not much to do outside of working hours.

A young man—Harold Jones—had come up to NOTS from Pasadena. He had taken on the extra duty of teaching a Spanish class at the night school in one of Burroughs High School buildings. He conceived the idea of a mineral club as a hobby, and this was a natural for this region, since it is highly mineralized. Many famous deposits of ores have their home in this region, as the Golden Aster gold mine at Randsburg (25 miles away), Atolia scheelite (27 miles), Searles Dry Lake deposits near Trona (25 miles), etc. Less than a hundred miles away is Death valley, lowest point in the U. S.; as well as Mount Whitney, highest point in the country.

One summer night in July, 1945, in Joneses home, a dozen people met and decided to organize the NOTS Rockhounds Club. Early meetings were held in homes, and one meeting was held in the club room of Dunmovin Camp, some 47 miles away. The owner of this camp has a mineral collection and museum there, and later sugested many field trips to areas well known to him. A. L. Brunner was elected first president; Opal Jones become vice-president; and Polly Winklepleck was chosen first secretary, a post she has held to the present time. In November of 1945 a treasurer was created, and Polly was chosen to hold this post also. In September, 1945, it was decided that club records be kept.

The first organized trip was made September 30, 1945, to Red Rock Canyon nearly 50 miles, where some petrified wood, a few fire opals and some chalcedony were found. In October the Club made up a combined exhibit of mineral specimens for the Trona, California, Hobby Show, and the result was a Special Prize Blue Ribbon. The exhibit was made up by the following:

H. R. Richardson—Herkimer "diamonds"; H. T. Zone—garnets; H. W. Winklepleck—Uncut gems and mineral specimens; Ralph Quinnet — Yemen Stones; D. R. Crawford—Opals; Mrs. J. B. Sykes—cut and polished slabs.

In the summer of 1946, with an ever increasing membership (in line with the growth of the base), the Club was assigned a building on Burroughs School grounds. The Navy Recreation Fund contributed $150 for equipment, and Ralph Dietz loaned his complete line of lapidary equipment to the Club. Howard Winklepleck was elected Lapidary Leader and a crew of 12 men kept the shop open five nights a week for use and instruction to members. About this time, Rachel Cammack, an artist at NOTS, designed the emblem for the membership cards—a "ro-k" hound sniffing at a rock on the desert. In the fall of 1946 the final draft of the constitution and by-laws were drawn up, and the Club was taken into

the California Federation of Mineralogical Societies.

In December, 1946, the Navy assigned the Rockhounds a permanent building for their lapidary shop, an air-cooled quonset hut, and this is kept open five nights a week. The equipment consists of 6, 12, and 16-inch diamond saws; sanders and polishers; a two-spindle optical polishing machine; 30-inch lap; individual cupboards, etc. Money is raised to buy additional equipment by various forms of entertainment, as minstrel shows, raffles, etc. Many beautiful cabochons and polished slabs is the result of the interest shown in the shop.

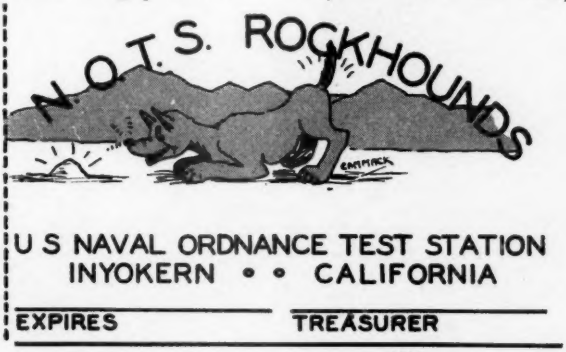
Regular meetings are held the first Monday of each month, and anyone is welcome; although those living outside of the base should contact the secretary prior to coming so that clearance through the sentry gate may be facilitated. Every meeting is designed to be both instructive and entertaining. Sometimes prominent speakers lecture the Club. Unusually interesting have been Kilian Bensusan, Bill Lewis, C. A. Wirtanen and Robert Sherven. Movies and slides are shown from time to time. On March 10, 1947, a "Black Light" show was given. For nearly four hours the attention of the Rockhounds were held by a fashion parade, rhumba in fluorescence, blue moon number and a fluorescent strip tease.

Junior members of the Club, the Pebble Pups, may use the lapidary, also. This is the 8 to 14 year old division, and several activities are being planned for this group in conjunction with the adult group.

John King of Dunmovin Camp, and Bill Lewis of the Wagon Wheel Mine and Cafe (about 20 miles away, on the Randsburg to Trona road), have been very helpful in planning field trips. They both know the desert well, and know of many fine gem and mineral localities. The following are a few of the localities visited: (1) Lost Chance Canyon, fire opals; (2) Searles Lake, borate minerals, also a trip through the potash plant there; (3) Cinco deposit near Red Rock Canyon, feldspar and quartz crystals; (4) Blue Chalcedony Springs, geodes, chalcedony, and ending up in Bill Lewis' Cafe. Besides viewing Lewis' collection, he treated the weary Rockhounds by serving them barbequed wild burro; (5) Lone Pine, beryl and amazonite; (6) Horse Canyon, moss agate; (7) Death Valley, borate minerals; (8) Camp Irwin, agate and honey opal; (9) Bloodstone Field, plasma stone, agates, jaspers and fossils; (10) Calico Mountains, silver, lead and jasper; (11) Green Horn Mountains, feldspar, quartz crystals, scheelite; (12) King Solomine Mine, gold; (13) Keeler area, (14) Balarat and Panamint Valley; (15) Coso Hot Springs.

The present officers of the Club are: Ralph Dietz, president; Dwight Crawford, vice-president; Bill Worth, treasurer; Polly Winklepleck, secretary; Howard Winklepleck, Lapidary leader.

Dietz hails from Seattle, Washington. He has been polishing optical glass for 18 years. When his hobby of optics



The attractive emblem for the NOTS membership cards

turned into his life's work, he began searching for another hobby. About ten years ago he moved into a house and found a tray of 20 mineral specimens left by a former tenant. He was fascinated by the shapes and colors of the specimens and thus was born his new hobby. He is a member of the Rocks and Minerals Association of New York, Mineral Society of Southern California, Searles Lake Mineral and Gem Society, Los Angeles Lapidary and Los Angeles Astronomical Society. A graduate of San Jose State College, where he majored in chemistry, he worked seven years at Mount Wilson Observatory and later did some work on a 200-inch telescope for Caltech. He sometimes finds time to design and grind a telescope lens, and has made several of these instruments. He came to NOTS in June, 1946. He thinks it possible that he was the first to use the optical method for cutting and polishing. At least he uses this method in all his lapidary work. He says it is the only method that puts a perfect polish on gems. It is concerned with grinding on metal laps and polishing on pitch laps. He organizes field trips and finds time to teach a class in earth sciences one night a week at Randsburg, 25 miles away. He has a Dana collection of some 2,000 mineral specimens, besides many fine slabs and cabochons.

Howard Winklepleck came from Washington, Kansas, originally. He transferred his work from Caltech to NOTS in 1944. He has many beautiful fluorescent specimens, fire opals and quartz crystals. He is the Club's foremost authority on "Black light". His wife, Polly,

Dwight Crawford and George Harris try their hand on a new "find".

has a varied collection, but her prize specimen is a cluster of fine calcite crystals coated with manganese, which came from Mexico. She also has many fluorescent minerals, as well as a nice collection of borate minerals from Searles Dry Lake. Her yard is full of specimens—the flower beds and the walks are lined with specimens. Her friends often chide her, saying, "Why go on a field trip when we can find everything right in Polly's yard?"

H. R. Richardson has an excellent collection of Herkimer county (New York) "diamonds." They range up to an inch in diameter, are doubly terminated, and are naturally highly polished. He tells of their formation in limestone in New York, and how he acquired them one at a time. He specializes in the quartz family of minerals and is the Club's authority on that subject. Dwight Crawford has a very good fluorescent collection. Other members have nice geodes, agates, moss agates, amazonite, beryl, scheelite gold and other local minerals, as well as many from foreign countries.

Two field trips per month are taken—a one day trip and an overnight or two day trip. Erma Pierson, one of the charter members, is civilian editor of the NOTS Rocketeer, the weekly Station paper. She keeps the local public well informed of the Club's activities, as well as writing many interesting articles about mines, mineral localities, desert oddities, interesting trips and places of historical interest.

Today, the NOTS Rockhounds boasts 128 members and may be classed as one of the leading societies of the state. Situated at the foot of the High Sierras, amidst rugged grandeur and beauty, in the center of a highly mineralized and interesting geological region, and yet surrounded by the comforts and conveniences of modern civilization, not much is lacking for the fulfillment of the rockhound's dream.

ROCK CRYSTAL LOCALITY NEAR FONDA, N. Y.

BY PETER ZODAC, Editor

Rocks and Minerals

About 5 miles west of Fonda, N. Y., in the Beekmantown formation, some very nice rock crystals have been found. These occur in the woodlot on the old W. Neal farm which can also be located as 4 miles east of the little hamlet of Stone Arabia.

The locality was visited Sunday, July 27, 1941, by four collectors:—Drs. L. Prescott Brown and A. C. Worth (both of Albany, N. Y. the guides), O. W. Bodelsen (of Mt. Kisco, N. Y.), and the writer.

The best crystals were found loose in the soil but though the soil is soft and loose, it is so full of roots that digging is extremely tiresome and tedious so that spots are quickly abandoned and new ones started. A few good specimens were found in the small outcroppings of limestone (the Beekmantown formation). In their wanderings over the terrain, the collectors noted many woodchuck holes and out of curiosity someone dug into the debris brought up by one of the little animals. His efforts were rewarded with some fine crystals and then—everyone was digging into the little mounds. The digging was easy and many crystals were found. The quality of the crystals found in the debris brought out of the holes was so good that it has given Dr. Worth a bright idea. He is thinking of training woodchucks to dig holes in promising virgin territories and have them bring up crystals for him. The only hitch to this scheme is—who is going to catch the woodchucks and how can be (Dr. Worth) make the animals understand what is wanted of them?

Fonda is in northern Montgomery County of eastern New York.

THE BRUCE MINES REGION OF ONTARIO, CANADA

BY JOSEPH A. MANDARINO
1034 N. Keystone Avenue, Chicago 51, Illinois

The dumps of the once-famous Bruce and Wellington Mines near Bruce Mines, Ontario, Canada, were the object of two field trips taken by the writer. The first trip was made with fellow members of the field geology class of the Michigan College of Mining and Technology, Sault Ste. Marie Residence Center, on June 28, 1947. Mr. Ernest C. Kemp was in charge. The second trip was made by the writer on July 26, 1947.

LOCATION AND ACCESSIBILITY

The dumps are located about one mile from the town of Bruce Mines, Ontario, which in turn is about forty miles east of Sault Ste. Marie, Ontario. Sault Ste. Marie, Ontario, is just across the St. Mary's River from Sault Ste. Marie, Michigan, which is in the northeastern part of the Upper Peninsula.

To get to the mine dumps, the collector should drive east from Sault Ste. Marie to Bruce Mines via Ontario Highway 17, also known as the King's Highway. A short distance beyond the small cluster of buildings, which is Bruce Mines, is a small road leading off to the right. This road is marked as being the road to the Bay View Hotel. The collector should drive down this road to its terminus at the dumps. The dumps are on the shore of the North Channel which is a part of Lake Huron.

HISTORY

Acording to Moore (1), mining began in this region in 1846. The first copper mining in the Dominion of Canada was carried on in this region. The mines were closed in the 1890's because of the high cost of shipping the ore to England for smelting, but were reopened during World War I. They have not been worked since then. About 300,000 tons of ore, averaging 4½% of copper, were produced.

At the present time the mines, which consist of long trenches following the ore veins, are flooded. The mines are posted by the International Nickel Company. Because of these conditions, the collector would be wiser to confine his collecting to the dumps and the outcrops around the dumps.

GEOLOGY

The ore, which consisted mainly of chalcopyrite with some bornite and chalcocite, was found in quartz veins cutting diabase. The diabase intrudes the sedimentary rocks of the region, which are described by Young (2) as being Huronian in age. These rocks make up the Bruce Series. The quartz veins contain a considerable amount of siderite. The veins vary in width from several inches to several feet. One vein that the writer saw was four feet wide. Most of the veins were not more than 2000 feet long, but one that was followed during the mining is said to have been over a mile and a half long.

Diabase, granite, basic and sedimentary rocks, and quartz conglomerate are present on the dumps.

MINERALOGY

The following minerals were found on the dumps and in the outcrops around them:

BORNITE: Small, tarnished masses in quartz. Associated with chalcopyrite and chalcocite.

CALCITE: Yellow to colorless crystals associated with siderite and quartz. The crystals range in size from 3/16" to ½" and are scalenohedrons sometimes modified by rhombohedrons.

CHALCOCITE: Small masses and grains in quartz with bornite and chalcopyrite.

CHALCOPYRITE: Masses and grains in quartz with siderite, bornite, and chalcocite. Sometimes beautifully tarnished.

MALACHITE: Found associated with most of the other minerals of the region as an alteration coating and stain.

QUARTZ: This is by far the most abundant mineral in the region. It occurs as masses and as crystals forming very beautiful groups. Most of the massive quartz is of the milky variety. The crystals occur in two colors: clear or color-

les and pink to red. Quartz is found associated with all of the minerals in the locality.

SIDERITE: This is the second most abundant mineral in the locality, and is found as cleavable masses, as masses with alternate bands of quartz and chalcopyrite, and as groups of rhombohedral crystals ranging in size from druses to crystals an eighth of an inch on a side. On the last trip to the locality, a specimen consisting of two large crystals of siderite pseudomorph after calcite, was found. The crystals, scalenohedrons modified by rhombohedrons, are hollow. A small hole is present in the side of one of the crystals, and through this it can be seen that the inner surface of the "shell" is coated with small siderite crystals. The two crystals are on a siderite matrix, and are surrounded by small siderite crystals and scalenohedral calcite crystals.

Moore mentions barite as being found in the quartz, but none was seen on either trip. The same holds true for dolomite which is mentioned by Young.

BIBLIOGRAPHY

(1) Moore, Elwood S.; Canada's Mineral Resources. 1929

(2) Young, G. A.; A Descriptive Sketch of the Geology and Economic Minerals of Canada. 1909

GEM TRADE LABORATORY, Inc.

REPORT ON
LINDE SYNTHETIC STAR RUBIES AND SAPPHIRES

The new Linde Air Products Company synthetic star rubies and sapphires have been examined by Dr. A. E. Alexander, director of the Gem Trade Laboratory, Inc., and found to be merely a variation of existing types of synthetic corundum as manufactured in Europe and the United States by the well known Verneuill process.

The curved lines which are a distinctive feature of all types of colored synthetic corundum are present in the new star stones. The curved lines are best seen if the stones are immersed in water or in monobromonapthalene and examined under a binocular microscope or loupe at a magnification of ten times.

Some of the synthetic star rubies examined, proved interesting in that the minute crystalline inclusions (which when properly oriented make the star effect possible) were found to be concentrated close to the surface of, and around, the apex of the stone. The interior of these stones consisted of clear ruby color, apparently wholly free of any inclusions. From this observation it would appear that the process consists of starting out with standard, chemically pure, calcined gamma alumina, containing the correct percentage of coloring agent, to form clear ruby color. The composition of the gamma alumina is then progressively changed to permit the formation of a dense crystalline mass which is superimposed on the material already deposited.

The change in composition does not affect the crystal structure of the boule, for when the new star boule is properly cut (perpendicular to the vertical or "c" axis), a well defined six rayed star results. In fact the star effect is almost too perfect, a distinguishing characteristic that at once types the stone as a manufactured article.

Synthetic star sapphires also reveal a good, sharp star. In this material, however, the distribution of color is decidedly uneven. This is especially noticeable when the stone is immersed in liquid. In this medium, the contrast of the light and dark curved color bands is most pronounced.

It should be pointed out that a true sapphire blue has not been attained in these synthetic sapphires. The dealer in genuine star sapphires will "spot" these new synthetics at once on the basis of color alone.

Magazine is Tops

Editor R. & M.:

Consider your magazine tops and am enjoying it from cover to cover.

Oliver Mason
Ogden, Utah

October 26, 1947

JADE IN CALIFORNIA

BY R. F. HENLEY

4075 19th Street, San Francisco 14, Calif.

There are several spots on the coast of Monterey County, California, where a fair quality of nephrite jade is found. One of these, near Big Sur, has been visited by the very few who knew of its location and several very large boulders have been obtained, one of which, weighing 121 pounds, is now on exhibition in the California Academy of Science building in Golden Gate Park, San Francisco.

Another location is at the mouth of Willow Creek, about sixty miles south of Carmel. The writer recently visited this place and in addition to about a dozen pebbles from size of a bean to a turkey egg also secured a piece 12 inches in diameter and from one to four inches thick. It is all water-worn and picked up on the beach at very low tide, except the big piece which was high and dry at the base of the cliff lying on the sand like a gem

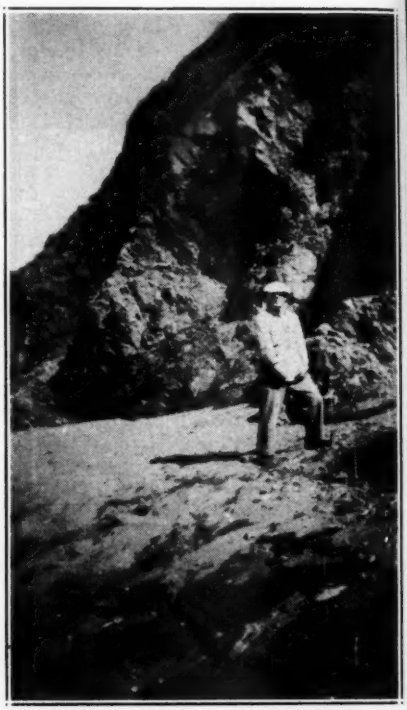


Photo to Right
A collector holds the 12 inch jade boulder found on the beach in Monterey County, California.

Photo Below
R. F. Henley (left) and Orlin J. Bell (right) collecting jade on beach at Willow Creek, Monterey County, California

on a cushion. See picture. Close by is also a deposit of aragonite which is very interesting as some of it lays in parallel plates like the plates in an automobile battery with air spaces between. This deposit is still forming and there are spots on the cliff where the face is orange colored and water running down the face. This too must be gathered at low tide as the deposit is about a quarter-mile north of the mouth of the creek which cannot be crossed at high tide. There is plenty for all the collectors who care to clamber over the rocks to secure it.

MOSS OPAL MINE IN WESTERN NEBRASKA

BY RICHARD MITCHELL
Box 612, Bayard, Nebraska

Near the apex of a sagebrush covered hill in the western part of Nebraska is a deposit of beautiful moss opal.

The opals found here are translucent to opaque. They are white in color and contain fine dendritic patterns of manganese dioxide which is black. These opals occur as rounded nodules buried in solid limestone. The nodules are chalky on the outside and many beautiful fern-like stains cover this crust which I believe to be the earthy variety of opal called tripolite because hydrochloric acid will not react with it as it does with the limestone which is the matrix rock. I have also noticed a few small nodules that seem to be composed entirely of this chalky variety of opal. Some of the opals found here have a slight green fluorescence under the purple-x bulb, and the limestone that surrounds these beautiful nodules has an excellent green phosphorescence after being exposed to the same light. Along with these opals I found some masses of radiated crystals. I believe this mineral is a variety of calcite because of its cleavage, and also when touched with a little hydrochloric acid the test is positive.

It is my belief that this deposit was formed by the solidification of a silica gel which originally made up the skeletons of small sea organisms. The silica from the skeletons of these organisms collected in jelly masses and was deposited along with the shells and skeletons of other sea creatures composed mainly of calcium carbonate. The manganese dioxide which was also present was deposited at the same time and found its way through pores in the mass of sediment as it became solidified and changed into rock, thus forming dendritic patterns in the opal, around the opal nodules, and through the limestone in general.

A horizontal tunnel had been dug into this hill for the purpose of reaching these stones; but since then there have been rock slides and people have been bitten by snakes, so a group of people covered in the tunnel by the use of dynamite. However, many small opals may yet be found in the large chunks of limestone which still cover the dump near the old entrance.

To reach this deposit, which is in Morrill County, go north from Bridgeport on the state highway 19. After a few miles you will come to a steep and long grade in the road which is called Angora Hill. After you have driven about half way up this hill, turn east on a road which is little more than a car trail. This trail is very winding, but beautiful as it winds through rugged hills covered with sagebrush and wild flowers. After you have gone about two miles, a dim and seldom used car trail can be seen going straight up the side of a hill. This is on the left side of the road. If you turn off on this trail you can drive within a few feet of the moss opal deposit. It would be advisable, however, to keep going down the main car trail until you reach a ranch house here you should gain permission to visit the deposit. If you visit this old mine be sure to be on the lookout for rattlesnakes because they are very numerous on these Nebraska hills. Also close all gates along the road to this deposit.

As far as I know this is the only deposit that has been located, but I see no reason why others should not be in existance because there are many hills which look no different, and which are composed of this same type of rock.

FOSHAG ON PARICUTIN

BY CHARLES A. BELZ, Secretary
Philadelphia Mineralogical Society

Clear, cold nights accentuated the ominous crescendos of the marrow chilling air alert sirens. Frigid bed-rooms spurred the dash from warm covers into corduroys, lumber-jack shirts and mackinaws, and armed with flash-light and whistle we rushed to our various civilian defense posts. The family car spent days on end in the garage confined by chronic malnutrition. The whole world sat tense while Americans and Nazis shot it out in the deserts of North Africa, and politicians speculated over the meeting of Roosevelt and Churchill at Casablanca. Tom, Dick, and Harry were leaving for Induction Center at the end of the month. This was February in 1943. Civilized Man was again bent on destroying himself and the fruits of his civilization, while Nature oblivious to the insanities of the fancied Lords of Creation went about her ordained tasks. The rains and snows fell in their time, and the streams and rivers pursued their everlasting labor of levelling the hills and filling the valleys. Pluto was mischievously engaged roiling up the magmas deep beneath the fiery belt across the waist of Mexico unconcerned and unimpressed by the orgies of Mars in *his* belt of fire across the face of Europe and Asia. And, in February a volcano is born in a lowly corn field near the village of Paricutin in Mexico. Long after Mars has succumbed exhausted to his stupid excesses, and Man, (should any of the species remain) has ceased to marvel at himself over his creation of a toy "atomic" puff, the crater at Paricutin will stand as a scarred monument to an incident, a moment in geologic time, a minor adjustment between subterranean forces and crustal reactions.

The earth's surface is studded with the scars of such purulent tumors, and they have been the subjects of detailed clinical study by volcanologists the world over for many generations . Their origin and history have been reconstructed from the evidence at hand, and theories evolved that have met with satisfactory agreement by students of volcanism. Recurrent eruptions such as occur at Vesuvius give periodic opportunity for study of a volcano in action, but the actual birth of a volcano in an inhabited, accessible part of the world would be an event in history, and an opportunity never before given to the scientific world. Such an opportunity was Paricutin Volcano, named for the village of Paricutin some 200 miles west of Mexico City.

Details of the beginning of Paricutin are well known to all readers in the earth sciences. But no amount of reading could equal in its impressiveness the oral eyewitness account and motion pictures as presented by Dr. William F. Foshag, Curator of Mineralogy and Petrology in the U. S. National Museum, as presented at the October, 1947, meeting of the Philadelphia Mineralogical Society. Dr. Foshag was one of the first to hurry to the scene on first reports of this event. He was one of the band of scientists who spent months in precarious residence there, accumulating data on every phase of the growing volcano. They made a complete photographic record of the progress of its development, taking thousands of feet of motion pictures, day and night, from every vantage point, even from the air. They amassed volumes of data that will take years to interpret.

For perhaps the first time in the recorded history of volcanoes was the very first wisp of smoke seen. Dionisio Pulido was plowing his corn field with his ox on this eventful day, the 20th of February, 1943, while his small son was busy in the field nearby. The boy heard the earth rumble beneath him and ran to his father in great alarm. Dionisio looked back and from the fresh plowed furrow saw a wisp of white smoke spiralling upward while the earth beneath rumbled like the growl of an angry beast. Thoroughly terrified they ran to their cottage to save the other animals, and then hurried to the village of Paricutin two miles away to tell the good padre about this awful thing. Dr. Foshag and his party were told by their native cook that he

also had seen the birth of this monster. A crack opened in the earth where the smoke was rising, and the sides began to fall in until there was a hole about two meters across, belching small stones, smoking and rumbling in a most terrifying fashion. One of the Indians overcoming his fright retrieved several of these stones and carried them to the padre so that he could bless them and enlist divine aid to protect them and their homes from this monster. That night neighbors could see a luminous spiral above Dionisio's field, and the next morning, there was to be seen a cinder cone, some twenty feet high belching smoke and stones, and growing ever higher. Within a week the cone had grown to 500 feet, and in less than a year it had risen to 1,500 feet. Paricutan is still active, and is still growing, and no one can predict when it will cease.

Lava began to flow within the first twenty-four hours, and had already spread 200 to 300 meters when first observed. The lava at Paricutin is not the liquid type found at some volcanoes, but is viscous and sticky, advancing more in the manner of a glacier and showing a front twenty to thirty feet high. Motion pictures show large chunks breaking off the face and rolling forward,—there are momentary glimpses of the red molten lava in the interior as the mass pushes forward and proceeds on its course over the rolling country. It is popularly believed that lava rises in the crater and flows over the brim of the cone, but Dr. Foshag explained, and pictures clearly show that the lava is issuing from vents in the side, or even near the bottom of the cone. A crack forms somewhat like the bursting of a seam, cherry red lava exudes perhaps joining with the emission from adjacent vents to form a veritable river of steaming lava flowing inexorably on its way of destruction and ruin. It is not necessary for the vent to be a large one, and it is quite possible for an opening not more than 2½ meters long to eject a flow which may measure 30 feet high at the face, advancing at the rate of 10 meters per hour, continuing to do so for weeks without interruption. The largest lava flow at the time of Dr. Foshag's observations was 10 miles long.

The lava is described as a basaltic lava, just a trifle more acidic, being just over an andesite composition into the basaltic. Analyses between the first flows and the present day emissions are substantially the same. The material ejected from the crater and seen in the photographs as a smoky plume poised over the cone is composed principally of gas, steam and ash. Motion pictures show in addition a constant expulsion of rock and lava fragments that are thrown to a calculated height of over 4,000 feet, and on falling, roll down the sides of the cone leaving a wake of smoke or dust giving the illusion of snowballs rolling down a hillside. Night photographs show these as balls of fire blazoning their glowing trajectories across the sky,—a gigantic projection of ten thousand Roman candles. The amount of material ejected is staggering. Calculations arrive at a fantastic figure of 100,000 tons of solid material with an additional 16,000 tons of water daily. This amount of water is far in excess of what could be derived from the magmas, and therefore must represent a good fraction of ground water.

Detailed study was made of the gases present. Strange as it may seem, the gases from the crater are not particularly noxious although those from the fumaroles, those small gas spouts from the flowing lava, are definitely so. Great difficulty in sampling gases at these fumaroles was encountered due to the high temperatures and consequent fusing of the sampling tubes. There is a great deal of ammonia in evidence particularly in the vicinity of the fumaroles where the ammonium chlorides are deposited.

Minerals found were rather disappointing. There are small amounts of sulphur and the chlorides of magnesium, sodium, ammonium and iron, with occasional selenite gypsum. There is nothing to compare to the complete suite of minerals found at Vesuvius. Magnetite and hematite has been found about the fumaroles, but then only at the very high temperature ones.

Paricutin is the newest of a chain of extinct volcanoes stretching across Mexico at this point almost from coast to coast.

They are all prehistoric craters with no recorded history, not even legends among the natives. One exception is the crater at Jorullo about fifty miles from Paricutin which erupted in 1759 but which lasted for only seven months.

It is as impossible to describe a volcano in eruption or even the motion pictures of one, as it would be to describe the Grand Canyon or a Brahms symphony The utter violence of Nature in the sudden explosive release of these incomprehensible forces is beyond the power of words alone,—they must be seen. Equally difficult to comprehend is the audacity of the men who study these monsters. These motion pictures and scientific observations were made as close to the crater as it was physically possible to get. They were made far beyond the point where it was possible to get back safely. On Dr. Foshag another degree might well be conferred, a well deserved "M.U." meaning Master of Understatement. When asked whether it wasn't "dangerous to aproach so close to a seething volcano", his reply was that "sometimes we were a bit nervous and right glad to finish our readings and get away."

A Correction on California Garnet

Dear Mr. Trainer:

In your article "Eight Recent Garnet Finds" in the September, 1947, *Rocks and Minerals* under the heading "Zoned Garnets and Pseudomorphs from Garnet Hill, Calaveras County, California", the statement is made that "These garnets were first found by Hatfield Goudey in 1940 —." Evidently this statement was intended to be placed under the heading "Uvarovite from Jacksonville, California" and was inadvertently misplaced. This is apparent on examining your articles in August, 1945, and October, 1946, *Rocks and Minerals*.

To keep the record straight, the andradite garnets which I sent you from Garnet Hill were in part obtained from Mr. L. A. Smith, the owner of the property on which the garnets occur and in part collected on the property through Mr. Smith's courtesy, all in the years 1942 and later. The locality was at that time fairly well known to mineral collectors and it was only through Mr. Smith's development work that good specimens were still available.

My understanding, although I have forgotten the source, is that the Garnet Hill garnets were first found in the latter part of the nineteenth century but the locality was either "lost" or never exactly known to mineralogists. In "Minerals of California" by Dr. Arthur S. Eakle (California State Mining Bureau Bulletin 91, November 1922) it is stated under "Garnet": "Found at Bald Point on the Mokelumne River". Bald Point is topographically and geographically similar to Garnet Hill but is a few miles farther down the river. In a later edition of "Minerals of California" by Dr. Adolf Pabst (California Division of Mines Bulletin No. 113, February 1938) the above statement is deleted and replaced by "Andradite is found with idocrase and epidote at Garnet Hill, just above the confluence of Moore Creek and the Mokelumne River, Melhase ("Some garnet localities of California. *The Mineralogist* 3 No. 11; 7-8, 22-24, (1935)". I understand that in the interim Mr. Julius Gisler rediscovered the occurrence, to the great benefit of mineralogy, and took Mr. Melhase and others there. Since, with meager and erroneous information, he pursued his object through rough and difficult country to its successful culmination, Mr. Gisler certainly deserves mineralogy's credit for his discovery.

Recognition and establishment of the nature of the zoning and pseudomorphs would necessarily be more recent and the credit for bringing them out should belong to you.

Hatfield Goudey
Yerington, Nev.

October 21, 1947

FULGURITES, AND PHYSIOGRAPHICAL MEMORANDA OF SAN CLEMENTE ISLAND, CALIFORNIA

BY M/SGT. JOHN O. GRIESBACH, U.S.M.C.
209 So. Butler Drive, Midway Park, North Carolina

San Clemente Island is one of the Channel Islands, located south of the Santa Barbara Channel off the coast of southern California. It lies offshore some sixty miles by ship from either San Diego or Long Beach, California, and is about twenty-five miles west of the more popularly known resort center, Santa Catalina Island.

The island is from two to five miles in width, and is nearly twenty-six miles in over-all length. It is shaped very much like the "basin range" mountains of the intermontain basin region of Nevada and Utah, and is believe by some to be of similar origins—that of an upthrown fault block. Its widest point is near the southern end, and is narrowest near the northern tip, the island being slightly arcuate in a westward direction. The east coast of the island is very rough in appearance, being ruggedly cliffed from an iron bound shore upwards to elevations of two and three hundred feet. Above this height the eastern face of the island rises in more gentle slope, from ten to thirty degrees on the average, until the backbone of the island is reached. The western face is in entirety more gentle in overall profile, but some sharp cliffs and slopes are noted. Both the eastern and western faces of the island-mountain are deeply dissected by canyons and gullies which cut into the basic plutonics which form the major mass of the island. Some of these canyons contain racing intermittent streams during and immediately following periods of rain. There are no permanent streams of any consequence on the island and therefore the problem of water supply is great. At the time of the writer's brief sojourn some water was being transported to the island by a Navy tanker, and some was being stored in tanks as runoff from a large concrete water catchment area. A very little water is found in small ponds which were formed many years ago through the agency of damming some gullies, and these ponds were used as water holes by sheep ranchers flocks, but the ponds were designated "unpotable" at the time of my visit.

At present writing the island is under the jurisdiction of the U. S. Navy and is in its entirety classed as a Naval Reservation, therefore permission to land or visit in the case of civilians must be arranged through the offices of the Commandant of the Eleventh Naval District, San Diego, California. The writer spent some four months or more on the island during two different periods as part of a Marine unit in training exercises prior to the recent war and was enabled to get a first hand view of the place.

A few words here might show to a small extent the extreme desolation of the place. The wild life of the island is meagre, some rabbits, mice, fox, numerous lizards, crows, sparrows, and sea birds being among the most noted types. Various kinds of grasses, lichens, low growths of bushes in some of the canyons, and cacti are the preponderant flora encountered, only about a dozen small stunted deciduous trees having been noted by myself in wanderings over the island. The possible existance of sheep and goats was argued during my stay on the island but I rather doubt their presence. The island was used for a time before the Navy took it over as a sheep grazing range, and skulls and fragments of sheep skin were noted at various places during our encampment there in 1939. The island as seen from the "backbone" at about daybreak in the winter has an unearthly beauty which is never forgotten, it appearing as an immense inanimate whale or other gargantuan whale-like animal resting in a sea of fog. The fog bank on many of the winter mornings is from one to three hundred feet in thickness, completely blotting from view the lower parts of the island and the ocean, and billowing upwards into the valleys as the wind is wont to move it, while away off to the east rising out of the sea of fog lies another such "being"—Catalina Island.

On the northwest coast between Northwest Harbor and West Cove lies an area of scrubland and sand dunes. On the northern edge of the dunes and overlooking Northwest Harbor and the cape is one of the largest accumulations of fulgurites that the writer ever has seen or heard of. They litter the ground in great profusion, some lying in situ, and some having been eroded from their places of formation within the fine sand immediately underlying the area. Few of them appear to be the greatly elongated tubular types commonly met with in the dunes on the coast of Lake Michigan. Most of the San Clemente fulgurites are large masses of fused sand similar in shape to the stubble left after a field of corn has been cut over. The individual specimens which have remained in situ are of this type, having a more or less solid stem from one-half to three inches in diameter, and a branched system of offshoots or "roots" which is met with as the specimens are dug or pulled from the ground. The color of these fulgurites is from a clear to milky white, and dirty gray to brown stained and streaked. Those which have been eroded from places of formation are for the most part the whitish to gray colored ones. Mixed in with the sand where these spawn of lightning occur is a moderately large amount of marine shell matter in the way of flour, fine and large fragments of clams, gastropods, and the univalves known as abalones. Some of this shell matter has been very likely fused along with the sand by lightning and has entered into the chemical composition of the resultant fulgurites to some extent, to form a glass in part, and making a mixture with the lechatelierite proper. The hardness of the specimens grades from very nearly seven downwards to a little less than six. To my knowledge no optical work has been done to date on the San Clemente fulgurites. The shell matter in the sand was obtained in part from natural accumulation on the beach and thence by being transported to the dune area by aeolian method, but some of it—especialy the abalone fragments—were most probably derived from two large and prominent midden piles adjacent to the dune area on the Northwest Harbor upland. Some of the shell matter is present in the fulgurites as a portion of the loose sand which is a filling material in the hollow types.

The reasons for this large accumulation of fulgurites in one area of about roughly three hundred by five hundred yards—wherein lie actually thousands of fine specimens and hundreds of thousands of passable specimen fragments — is highly conjectural. It may quite well be that there is a massive body of iron-rich rock or ore underlying the area and which acts as a definite attraction to lightning, but I, as the writer, will have to leave the question "Why?" to more expert opinions, and let this stand as primarily a record of occurrence.

One other interesting geological observance on San Clemente Island is the number of wave cut benches present on the slopes of the east and west faces which show the positions of former shorelines. These I noted especially well on the eastern face of the island, and show up as broad gently sloping steps or benches as seen in profile. They appear to be four in definite number, but I believe this number may be increased to six by the addition of two other poorly defined possible benches which were noted at three places. At several localities on the island and on equal levels with the four prominent benches there are well developed but somewhat lately eroded sea caves which had developed in the basaltic rocks in past geological periods. One of these near the northeast tip of the island has two entrances, one above the other and separated by a two to three foot thick ledge of scoriaceous-appearing rock. The Chumash Indians (believed lately extinct) utilized many of these caves as burial places for their dead as is evidenced by the many skeletons found within them, as many as twenty being taken from one cave near Pyramid Cove by archeologists of the State of California. Many stone artifacts, club heads, mortars and pestles, metates and pounders, and gaming rings have been found on the island as evidences of these Indians who once peopled the Channel Islands, but of those bowls, shards, and gaming rings which I

found personally while there, only about half were of rock native to the island. With the exception of these foreign materials no other items of geological or mineralogical interest were noted. The benches and their attendant sea caves may very probably be correlated with those which appear on the mainland, and with probable features of the other Channel Islands. It seems inconveivable that they would be of different origins at different periods of geological time.

GEM VILLAGE ROCK SHOW

BY L. M. SHIPLEY
Bayfield, Colorado

In southwest Colorado on highway 160, eighteen miles east of Durango, is located the only Rock Colony in America, Gem Village. This a colony of people whose interests and hobbies are the various earth sciences and the comely art of peaceful living.

Once a year the Village has its Rock Show. This year, owing to shortage of time and space, there was a one day exhibit, October 5, 1947, at the Shipley Exhibit Hall.

Visiting Exhibitors were:

Noel Cunningham, F. N. Cunningham and Dan Hall, owners and operators of the Pinos Altos Craft Shop, Pinos Altos, New Mexico. Mr. Noel Cunningham developed and patented the idea of buttons made from gem stones. This is something new on the mineral market. These buttons are made in all sizes and from various materials, especially from America's only deposit of Ricolite (found in New Mexico). "Stone buttons and the accessories", — something every women rock collector has always wanted—now she may have them.

Just as Mr. Cunningham "stole the show" with his buttons, the Lard Brothers, Henry and Ed of the Rio Grande Gem Co., Hot Springs, New Mexico, made us bow to their fine stone and distinctive silver work. Did you ever see a gorgeous flower whose petals were made of stone in blending colors reposing on a silver bracelet, and tomorrow you could remove that flower and wear it in your lapel? Well, the Lards have it.

Other outstanding exhibits were: Jess Abernathy's, with his famous Park City pyrites and his faceted gems. Mr. Abernathy, accompanied by Neil Wright, came from Moab, Utah.

Robert D. Roots, 3147 W. 39th Ave., Denver, Colorado, displayed mineral specimens and cabochons.

"Rudy" Fahl, 1106 N. Nevada, Colorado Springs, Colorado, had an exhibit of general minerals, including some very unusual pieces.

Keith E. Nelson of Mancos, Colorado, with specimens, rings and fancy belt buckles.

Jim Wiley of Cahone, Colorado, with mineral specimens and his famous Jasper boulder weighing over 300 pounds.

Ralph Dabney of Center, Colorado, exhibited cabochons of Colorado's famous Plume Agate.

H. C. Brockman of Durango, Colorado, secretary of the Four Corners Rock Club, exhibited some unusual cut cabochons and prehistoric relics.

Mr. and Mrs. George Purdy of Monte Vista, Colorado, with fine cabochons.

The Gem Village exhibitors were:

Mr. and Mrs. Eddie Neuenschwander of The Colorado Gem Co. The Neuenschwanders are from California. They recently purchased The Colorado Gem Co., from its original owner Frank Morse, who was forced to sell owing to ill health. Their exhibit was lapidary machinery, silver jewelry and cabochons.

Mr. and Mrs. N. S. Green and daughter Jane, owners of the Gem Exchange. Displayed the noted Branson collection, the Gilde Gem Cutter and their fine collection of gold nuggets.

Mr. and Mrs. E. E. Shipley of Shipleys Mineral House, exhibited mineral specimens, cabochons and gold and silver jewelry.

Bob Taylor of the Taylor Lapidary Shop, featuring his unusual cabochons and silver mounted materials, with the

new Colorado chrysoprase.

Mr. and Mrs. Russell Purcell, private collectors of the Village, displayed part of their collections including Mrs. Purcell's oil paintings.

A visitor seeing only the Rock Show, sees very little of Gem Village. A town in its infancy, but a town where each of its residents has massed private collections or commercial stock piles of fine minerals and gems.

Come and go in haste, and you see very little; stay and visit awhile, if you are genuinely interested in minerals, gems or other earth science; soon you will find your self before the right door. The door into some one's choice or rare treasures, they may be down in some basement or dark closet or in a private vault. Where ever you find them — if you are a lover of that particular hobby, you will find yourself enthralled beyond the measurement of time; and those few hours you spend, the thrill and pleasure you have received — the pleasure that the earth hobbies bring, — well, you can not buy it, — no, not for a million dollars.

We, of Gem Village, do not judge you by the clothes you wear or the car you drive. We ask only that you be the "right-kind" of person. Our handclasp is warm and our doors are open in true western hospitality. When you have to travel on, — you will find a little feeling inside you, wishing you could linger longer. That, my friend, is Gem Village, — in southwest Colorado.

PALA FIELD TRIP

BY E. R. H.

Victor H. Arciniega, mining engineer, geologist and instructor in the Manual Arts Night School of Los Angeles, Calif., took his students on a most interesting, instructive and pleasant field trip on Sunday the 9th of November, 1947.

The trip was ideal from every standpoint. A dozen or more cars were at the meeting point, known as the Pala Indian Reservation, in the northern section of San Diego County, long before take-off time, and filled to capacity with ambitious students of his many classes, old and young alike.

It was a wonderful Southern California day, in fact a little better than average for our trip, as the skies were sufficiently over-cast to eliminate glare in driving or when working among the mining dumps. Cool and refreshing, from dawn to dark. Rain could have marred the day. But it didn't, although some of us did have the novelty of driving through a thunder and lightning belt for a short time on the way home. The round trip was approximately 275 miles from Los Angeles.

Mr. Arciniega has been instructing Geology in all its branches, also Petrology, Mineralogy, Micro-chemical Analysis and Chemistry for a number of years at Manual Arts. He believes in pounding practical work into his students just as soon as they show adaptability and stick-to-itness, and especially after they get the thorough knowledge of theory that he is so well able to teach. The application of which makes it vastly more interesting on such trips as this one. And he is to be forgiven indeed if his patience sometimes is aroused when his older students fail to recall and recognize some of the simpler physical details for minerals, rocks and geological formations, and the why and the wherefore of their being where and what they are.— Simple and detailed points that he has time and again explained in the classes.

At 10:00 a.m. we started out from the little Indian village of Pala, and in a matter of minutes came to the steeply sloping sides of the three small mountains that were east and north of the village and where most of the mining claims are located on an elevation of 1,000 to 1,800 feet above the plain of the San Luis Rey River. Pala, Calif., is famous for its gem mines, the minerals occuring in pegmatites.

With the permission and escort of one of the owners, we were taken through some of the workings and shown the

actual material in place, also spots where each of the various minerals had previously been removed, giving us a first hand practical view of the ore environment. Then after an explanation of the geology and the time history records, we were given an afternoon lease on the dumps.

Many, but not too many finds were made of Kunzite, Tourmaline, Amblygonite, Beryl, and of course much Lepidolite and considerable Rubellite (pink tourmaline crystals) in the Lepidolite. And yours truly was luck enough to pick up a nice well formed Tantalite crystal tip measuring 1½ by 1½ inches, which material is said to be worth about $6,000. per ton in the raw.

A very great deal of gem material and semi-precious gems have been obtained from this locality in the past, although at present, probably due to the high cost of labor, excise taxes, and other retarding political and economic reasons, there seems to be very little activity at present.

Much of the quartz was in shaply and exceedingly clear crystals, although that found on the dumps was mostly fragments. However, a great deal of it was coated with pink (probably decomposed rubellite material) and hence was picked up as Kunzite. But a close glance showed horizontal striations and always there was that tell-tale conchoidal fracture somewhere on its surface.

The first discovery of gem stones in San Diego County was made in 1880 by Indian school children while at play. And it was here that the gem Kunzite, was first discovered. It might be noted also that this county ranks fourth in the world in point of variety and production of semi-precious gems and gem materials.

Mr. Arciniega has often pointed out to us that the great and complicated geological faulting systems that have prevailed the past ages of Southern California history is one of the foremost causes of our present mild all-the-year-around climate, and that we actually have almost every type of formation found anywhere in the world, due mainly to this faulting.

THE MINERALS OF DERBYSHIRE

BY N. W. E. LEE
66 Victoria St., London S.W. 1, England

Derbyshire is almost entirely within the area of the Southern end of the Pennine range, which forms the back-bone of England. The wooded rocky valleys, such as Darley Dale and Dovedale, are well-known to tourists, as is also the Peak district, but the geology of this county is probably less widely known outside England.

The rock formation is predominantly of Jurassic limestone with igneous intrusions causing mineral veins. Even before the Romans first came to Britain in 55 B.C., Ancient Britons mined galena both in natural caverns and from man-made workings. It is believed this was traded with the Phoenicians in the same way as these Mediterranean merchants obtained tin from Cornwall. There is evidence that the Romans subsequently encouraged the lead mining, and a vase found at Pompeii, of Blue John, the semi-precious variety of fluorspar found only at Treak Cliff, near Castleton, shows that there was even at that time an appreciation of this unsual mineral. Since then the lead and zinc has been mined fairly continuously until the present day, although now, as in Cornwall, there are few mines that are still working.

The piles of mine waste, however, remain, and yield some extremely interesting specimens for the 'rock hound'. In a short holiday in this district I managed to collect some very nice pieces of galena and zincblende, as well as many interesting varieties of fluorspar; some in very large crystals.

At the Mill Close lead mine in Darley Dale, which ceased working in 1942, there are vast quantities of perfect crystals of calcite and some of Iceland Spar, the transparent form of calcite.

Blue John—The semi-precious stone of Derbyshire.

The predominant rock being mostly limestone, there are many large and beautiful caves in the county, some of which lead for miles underground and have even now probably not been fully explored. Some are interesting for their 'mineral' water springs and stalactities; one set of caves near Castleton is, as I have already said, where the Blue John is mined.

Blue John is a form of fluorspar which is stained with iron and manganese giving the distinctive and curious mauve and white banded appearance. This stone owes its name to the miners, who first called it Blue John in contrast to Black Jack, the miners' name for zincblende.

These caves are open to the public during the summer, and mining is continued during the winter. In the caves one can see fossilized fishes, and some malachite. There are several sets of caves in this locality, and in one a boat is needed.

Blue John polishes very nicely indeed, but needs considerable care as the crystals tend to come apart, leaving one with small useless pieces. The art of polishing this stone is a secret handed down from father to son in a certain Derbyshire family.

Chert and Other Minerals.

Other minerals and stones are also mined in Derbyshire, such as malachite, ordinary fluorspar, chert, and great quantities of limestone are quarried for road metal. I was lucky enough to be able to go over a chert mine at Bakewell, a typical Derbyshire village, very pretty and quaint. Here the chert, a very light grey 'flinty' form of silicon dioxide, is found in veins about three feet thick running almost horizontally through a small hill. The chert is blasted out in large blocks and taken to the potteries where it is ground and used as 'frit' for the glazed surface of pottery and chinaware.

I have spoken of nearly all the minerals and stones mined in Derbyshire, except coal, but there are many more which are found in this area, in smaller quantities. Among these are various forms of quartz including amythyst, although for this one needs to look for a long time with great patience.

A visit to this area of England, however short, will certainly be of the greatest interest, but it is necessary to know which localities to visit, and if any readers of *Rocks and Minerals* expect to have an opportunity of making such a visit the writer would be pleased to give further information.

VANADIUM IN CHERT

BY G. ELMO SHOUP
Valley View Mine, Clark County, Idaho

In the August, 1947, *Rocks and Minerals,* I found on page 709 a very interesting article, "A chert occurrence near Berne, N. Y.", by Peter Zodac. Then on page 737 there was an article on "Vanadium" which called to my attention a trip that I was pleased to take last spring. It was a trip to a new find. It all started with Roy Stinson, a farmer of upper Salmon River, Lemhi County, Idaho. He had asked me if I had ever seen the flint formation up the Lemhi Valley, about 22 miles southeast from Salmon. I said I hadn't and would be very pleased to look it over, so on Sunday, May 11th, 1947, we made the trip.

Up Highway No. 28, which is east of Salmon, Idaho, we passed an interesting formation which on the right leads up the flowing creeks to the Bitterroot Range. These creeks have and still are producing gold of sizeable amounts; the towering peaks produce gold, silver, and copper. On our right, or the southwest, a mixture of different formations meets the eye and such minerals as bentonite, gypsum, calcite, limonite, and some kaolin are found in the rolling foothills. Then on about six miles the small mountains of the Lemhi-Salmon River Range rise to divide the two river valleys. Here the watershed is not so noticeable but these mountains have many interesting gold, silver, and copper veins. It was on the southwest side of these mountains, not far from the Lemhi post office, that Mr. Stinson stopped his car and then pointed to a small red colored hill about three

The red limestone hill near Lemhi, Idaho

miles from the highway. The small red hill towered above a man's wheat field. I had to admit that this was the first time I had noticed the strong red color of the hill, although many trips in the past had taken me to this district but then most of my interest was on the northeast side of the road.

We drove to the farmer's house where we left our car and proceeded to walk a good two miles to the red hill. To my surprise I found it to be a regular limestone hill with many east-west trending veins of chert—some of it was jaspery chert, reddish brown to red in color. This was not the first hill of chert that I had examined but it was the first that stirred more than a collector's interest as it was a beautiful hard mineral. I sampled each vein. Some of the veins were four feet wide and all dipped under the limestone at a 26° angle. The erosion of the red jaspery chert was scattered for a mile below and gave the farmer a good soil for a beautiful wheat crop, also a healthy looking alfalfa crop next to the wheat. Not until Mr. Stinson hollered that it was time to go, for he had cows to milk and the sun was already peeking over the hill, did we leave.

I took the samples to my home in Salmon and the next day ran them under the chemical tests. For a while the tests were not successful except for iron. Then I came to the last or just about the last test which was for vanadium. The first test showed vanadium, then three more tests on the same sample, then tests on the other samples. All carried vanadium, some strongly, others only a trace, however the beautiful hard red jaspery chert contained the most.

A NATURAL MICRO MUSEUM DISPLAY

BY HOWARD V. HAMILTON
Vandergrift, Penn.

Recently, along the highway (route 56) east of North Vandergrift, Armstrong County, Pennsylvania, I dug an iron-limestone nodule from a shale layer. The nodule broke into three sections and appeared to be plain limestone. I was about to discard the pieces when I spied a tiny crack on the middle section. This crack led to the discovery of a microscopic mineral collection housed in a cavity approximately twenty millimeters long, eight millimeters wide and five millimeters deep. Powdery white calcite and brown iron oxide form patches around the edges of the cavity. Aragonite occurs as bundles of white, needle-like crystals pointing downward. Quartz is present as singly and doubly terminated crystals which are colorless and transparent. A solitary tabular crystal of sphalerite is a light honey yellow color. Red-brown rhombohedrons of ankerite make a pleasing background for the other crystals. I wonder how long it has been since Mother Nature arranged this miniature museum display and closed the stone doors about it.

WORLD NEWS ON MINERAL OCCURRENCES

(Bureau of Mines **Mineral Trade Notes**, July, 1947)

I. METALS

COPPER-LEAD-ZINC

Newfoundland. — Production of copper, lead, and zinc ores at the Buchans mine declined during the first quarter of 1947. The company continued diamond drilling in the vicinity of the present mine and from drifts spread out from the mine. Five diamond drills are operating. An aerial survey has been made of 1,100 square miles in the Buchans area, and four geological parties will soon begin prospecting and drilling. The company plans to spend some $450,000 during the next 3 years on this program.

The National Convention Committee reports that since 1927 the company has paid out $17,702,804 in wages. It is reported that Buchans mine has contributed directly to the economy of Newfoundland $40,420,872 over a period of 20 years, an average of $2,000,0000 a year. The company informed the Committee that unless new ore bodies were discovered, the life of the mine will begin to peter out in about 6 or 7 years (about 1952), with a possibility of a very much reduced activity for a further 2 years.

(Consul Robert J. Cavanaugh, St. Johns.)

GOLD

British ..Guiana.—An allegedly rich gold strike has been reported on the concession of the Rupununi Gold Mines, Ltd. Exploration is said to have yielded samples running as high as 100.53 ounces to the ton from the vicinity of the Marudi Mountain property near the Rupununi River (Vice Consul George W. Skora, Georgetown.)

LEAD AND ZINC

Tunisia.—The following list of lead and zinc mines in Tunisia has been furnished the Bureau of Mines by Consul General George G. Fuller, Tunis:

LEAD AND ZINC MINES IN TUNISIA

Company	Head office	Branch address	Mine
Societe des Mines et Fonderies de Zinc de la Vieille Montagne	19 Rue Richer, Paris, France	Mr. Ghysen, Mine de l'Ouarsenis, Bou Caide par Orleansville, Algeria	Djebba
Societe Miniere et Metallurgique de Penarroya	12 Place Vendome Paris, France	17 Rue Es-Sadikia Tunis, Tunisia	Djebel Ressas Ain Alega Sakiet Sidi Youssef
Mine de Sidi Bou Aouane	near Souk El Khemis, Tunis		Sidi Bou Aouane
Societe Anonyme Francaise des Mines de Djebel Hallouf	43 rue Cambon, Paris, France	Mr. Gittens, 26 rue de'Angleterre, Tunis	Djebel Hallouf
Compagnie Royale Asturienne des Mines	42 Avenue Gabriel, Paris, France	Mr. Gregoire, 1 rue Charles de Gaulle, Tunis	Djebel Kobbouch El Grefa
Societe "Les Mines Reunies"	22 Avenue Marnix, Brussels, Belgium		Sidi Amor Ben Salem
Societe des Mines du Garn Alfaya	27 rue Laffitte, Paris, France	Mr. Lescure	Garn Alfaya

Societe de'Exploitations Minieres en Tunisie	6 Squar de l'Opera, Paris, France	Mr. Perrot, 8 rue d'Avignon Tunis	Ressas Touireuf Djebel Trozza Djebel Tabouna Djebel Sekarna Djebel Diss
Societe Francaise de Bazina	6 rue de la Rochefoucauld, Paris, France	Mine de Bazina near Sedjenane, Tunisia	Bazina
Societe des Mines de l'Oued Maden	17 rue Es-Sadikia, Tunis		Oued Maden
Societe des Mines du Djebel Touila	43 rue Cambon, Paris, France	Mr. Gittens, 26 rue de'Angleterre, Tunis	Djebel Touila Loridga
Societe d'Exploitations et de Recherches Minieres dans l'A.F.N.M.	1 rue de Constantine, Tunis		Sidi Taia
Societe Nouvelle du Khanget	26 rue Lafayette, Paris, France	Khanget Kef Tout, near Beja, Tunis	Khanget Kef Tout
Societe Tunisienne Miniere et Metallurgique	17 rue Es-Sadikia, Tunis		Kef Chambi
Mr. Bauche	Bordji Chambi, near Kasserine, Tunis		Permis Bauche
Ingoglia & Heritiers Anatra	29 rue Charles de Gaulle, Tunis		Oued Kohol
Societe Anonyme des Mines de Fedj-El-Adoum	near Le Krib, Tunisia		Fedj El Adoum
Societe Miniere du Djebel Falten	1 rue de Monetour, Paris, France	Mr. Mathihan 10 rue de'Athenes, Tunis	El Akhouat
Mr. Aime Lescure	57bis rue Marceschau, Tunis		Nebeur
Mr. Dante Gerini	63 rue de Portugal, Tunis		Bou Kehil

TITANIUM

Mexico.—The Instituto de Geologia de la Universidad Autonoma Nacional (Geological Institute of the National Autonomous University) of Mexico is said to be investigating large deposits of rutile near the Pacific coast in the State of Oaxaca, near the village of Pluma Hidalgo. (Economic Analyst Horace H. Braun, Mexico, D. F.)

II. INDUSTRIAL MINERALS

ANDALUSITE

Union of South Africa.—Advance figures of the Mines Department show that 1,076 short tons of andalusite were produced in the first quarter of 1947, compared with 435 tons in the first quarter of 1946. (Minerals Attache William O. Vanderburg, Pretoria.)

MICA

Southern Rhodesia. — During World War II, when many facts and figures were not publishable, the mica situation in Southern Rhodesia was studied. A review of a report compiled by the Geological Survey of that country in 1943 will be of historical interest in view of later data received recently.

The presence of mica in Southern Rhodesia was known in the early days of settlement in the country, but it was not until 1917 and 1918 that serious consideration was given to mining the material. The initial output in 1919 was 6.12 short tons; production rose to more than 200 tons by 1928. In 1930 production declined rapidly. Output from 1919 to 1939, inclusive, totaled 1,451 short tons.

Mica mining has been confined to the northern part of Southern Rhodesia in areas comparatively remote from the larger towns that were built as centers for the gold-mining industry. The fields are described as follows:

The Miami or Lomagundi mica field was the first to be developed and from the beginning of the industry has been the chief producer. It is centered about 120 miles northwest of Salisbury on a spur of the Rhodesian plateau with a mean altitude of about 4,000 feet. On the west and east sides the country drops steeply to the Sanyati and Angwa Rivers, which flow with diverging courses into the Zambesi. The principal deposits are on the eastern side of the median watershed.

The Rusambo field is in low country between 2,000 and 3,000 feet above sea level near the Portuguese East Africa border and about 100 miles northeast of Salisbury.

The Fungwe field should be regarded as part of Rusambo, which lies immediately to the north and is separated from it only by the Mazoe River. It is being developed but up to the present has had no production. The Idol mine deposit was discovered in 1927.

When mica was found in the early days, specimens were brought to the towns as curiosities, and it was not until 1917 and 1918, when a drive was made by the development of base metals and nonmetalic minerals for strategic purposes, that serious consideration was given to the mining of mica in the Lomagundi district. After 1930, production fell rapidly, and despite efforts of the Government mining engineers to improve grading and packing, it remained in this haples condition until the last few years.

In the three fields, the geological conditions appear to be the same. The mica is found in pegmatite dikes in micaceous schist or gneiss containing quartz and garnet or staurolite in numerous places. The Miami field is the best known. Recent geologic mapping shows that most of the mines are near the contact of small granitic stocks, of which some 15 are shown. The pegmatite dikes dip and strike in various directions, many of them across the foliation of the schists. They are composed of feldspar and quartz, and many have lenticular cores of quartz, which may form conspicuous outcrops. Coarse black tourmaline is commonly present. The mica books are embedded in the feldspar but may be clustered around quartz lenses, and in some dikes the books are concentrated along one or both walls.

At the Grand Parade mine, which in the past was the largest producer, the pegmatite abuts against the granite contact, which cuts it cleanly and dips beneath the mine. The mica payshoot is 400 feet long and has been developed to a depth of 250 feet.

In the Rusambo field, conditions are rather similar. The country is formed of strongly banded gneiss that dips at a moderate angle to the south. Fine biotite mica is a conspicuous constituent in places. The disposition of the mica in pegmatite dikes is similar to that at Miami.

The Southern Rhodesia Government has given financial and other aid to the producers. As mica mining in the Rhodesias is not a normal mining risk, no private capital was available, and very generous terms had to be given to induce gold miners to undertake the work. Loans granted are a debt on the mine and not on the individual. Technical direction given by the mining engineers and geological departments of the Government is

not charged against the producer. It is probable that without the combination of private enterprise and State initiative the present expansion of mica production could never have been achieved.

The difficulty of supplying the plants and stores has been overcome by transferring hoists, pumps, and similar equipment from gold mines that had closed owing to the war and by granting priority for supplies to mica mining. There is a serious shortage of native labor, however, because available sources have been drawn upon by the military forces and the demands for increased food production.

Most of the surface deposits were becoming exhausted rapidly by 1943, and the operators were being forced to more expensive underground mining, but it was thought that with existing Government assistance the present output could be maintained. If greater production were desired, it was thought probable that additional Government support would be necessary.

The 1942 report stated that production of mica proved disappointing in 1942, but better results were expected in 1943. The Darwin fields were reopened the latter part of 1942, and small regular outputs were expected from this source. The Grand Parade, the largest producer in the past, at Miami was being reclaimed, and if the work was pushed energetically the output should increase. It was expected that other promising properties at Miami would be opened. It was anticipated that the entire mica production from the Colony would be sold to the Associated Insulation Products (Africa), Ltd., which, sponsored by the Ministry of Supply (U.K), was dealing in all types of African mica.

The 1943 review reported that in mica production greater strides were made than in any other mineral during 1943. In 1942, fewer than 10 Europeans were engaged on the Miami mica fields, and the total production for the Colony was still small. The apparent shortage of block mica of all grades and sizes for war purposes influenced the Government to increase production as rapidly as possible. At the end of the year about 46 Europeans and 1,600 natives were engaged in mica production in the Miami deposits. The purchase of the mica produced in Southern and Eastern Africa was handled by the Associated Insulation Products (Africa), Ltd., the headquarters of which were at Dar-es-Salaam. After somewhat protracted negotiations, the Southern Rhodesia Government had agreed to appoint the Company as sole buyers and exporters of mica produced in Southern Rhodesia, according to the Mica Orler, 1943. The report states that the appointment resulted in immediate benefit to the producers, as there was a qualified grader and packer in the fields who was able to give advice on market conditions, and the company, in addition, appointed one of its mining engineers to advise producers on their mining operations.

(Minerals Attache William O. Vanderburg, Pretoria)

Scientific Books For Finland

Editor R. & M.:

Finland has an excellent and keenly scientific minded Technical Institute, Teknillinen Korkeakoulu. During the war its library was bombed and totally destroyed.

On my recent trip to Finland for the American Friends Service Committee, I discussed the situation with Dr. Martti Levon, Director of the Institute. He said he would welcome gifts of Scientific and Technical Books and Periodicals from America to take the place of those destroyed. In the remarkable efforts for recovery that the Finns are making, the lack of technical library facilities is a very serious handicap. It would be a practical act of friendship to a nation that holds America in high regard if Americans should contribute good technical books and periodicals to this library.

Any such books should be marked for the Institute of Technology, Helsinki, and sent to the Legation of Finland, 2144 Wyoming Ave., N.W., Washington, D.C. Dr. K. T. Jutila, the Finnish Minister, will arrange for their being shipped to Finland.

Arthur E. Morgan
Member, American Friends
Service Committee
Yellow Springs, Ohio

Oct. 14, 1947

BIBLIOGRAPHICAL NOTES

Mineral Collectors Handbook: by Richard M. Pearl.

"*Mineral Collectors Handbook* is frankly an experiment", so states the author in its preface. If so, it is an experiment in the right direction and one which will create considerable interest and discussion and most favorable comment. The main thought expressed throughout the book is the care and preservation of minerals and this is something that collectors long have wanted. The book, therefore, is revolutionary in its scope and contents. That the author is confident of its warm reception is indicated in the preface, second paragraph, where he says: "A second edition is already being prepared for 1949-1950. It will be considerably larger, far more comprehensive, and better—because it will include the suggestions, corrections, and contributions which the author is soliciting from many sources."

The book is divided into 14 sections as follows: Preservation, Cabinet, Museums, Gems, Crystals, Meteorites, Fluorescence, Chemistry, Tests, Words and Names, Literature, Field, Maps, Societies.

That a lot of study, research, and experiments had to be done before this book could be prepared is only too evident when we examine the first section which is divided into 3 parts as follows: Stability of Minerals, Care of Minerals, and Lacquering Specimens. Care of minerals is subdivided into 14 parts as follows: Dirt, Rust, Silica, Organic incrustations, Tarnish, Oxidation, Deliquescence, Efflorescence, Heat, Cold, Temperature changes, Light, Cracking, Scratching. The part under Dirt is also subdivided and into 3 parts—Cause, Prevention, Removal. Thus throughout the first section, the author discusses briefly the defects of many specimens, how to prevent these defects, and if any are present how to remove them.

The author, Mr. Pearl, is one of the West's most ardent mineral collectors. He knows the problems of many collectors and his book was prepared to solve these problems.

All mineral collectors should purchase this book, purchase several in fact so that one could be given to a friend or local library, as it is one of great value to mineral-minded individuals. It is something new! But above all, it will help you with your "care of minerals" problem.

Mineral Collectors Handbook is 6½ x 9¼ inches in size, has a brown cover, contains 297 pages, and sells for $3.75 a copy.

For sale by the Mineral Book Company, 405-A Mining Exchange Bldg., Colorado Springs, Colo.

Minerals of Arizona (Second edition, revised): by Frederic W. Galbraith.

The first edition of 82 pages of this very interesting and highly valuable publication came out in 1941. Since then many new occurrences of interesting minerals have been discovered and are recorded in this revised edition. It is suggested and stongly urged that information regarding the discovery of new minerals or localities which should be included in future editions should be forwarded to the Arizona Bureau of Mines.

The second edition contains 101 pages, is 6 x 9 inches in size, and issued as Bulletin No. 153. Copies are $1.00 each (free to residents of Arizona) and can be obtained from the Arizona Bureau of Mines, University of Arizona, Tucson, Ariz.

Talc Deposits of Murray County, Georgia: by A. S. Furcron and Kefton H. Teague (mineralogy of deposits by James L. Calver).

Talc has been mined in Murray County since 1872 and the present report indicates that large reserves still remain to be worked.

The report contains 75 pages, 10 illus., and 6 maps.

Issued as Bulletin No. 53 by the Department of Mines, Mining and Geology, State Capitol, Atlanta, Ga.

Report of the State Geologist on the Geology and Mineral Industries of Vermont, 1945-1946.

The main feature of this report (Centennial Issue) is a very interesting story by Elbridge C. Jacobs, State Geologist, on the Vermont Geological Survey, 1844-1946, with five photographs of five former State Geologists. An index to State Geologists Reports, covering 33 pages, is also included.

This interesting report, of 98 pages, has been issued by the Vermont Geological Survey, Burlington, Vt.

The History of Granite: by Dr. Frederick H. Pough.

Dr. Pough, one of America's most distinguished mineralogists, takes time out from his duties as Curator of Physical Geology and Mineralogy at the American Museum of Natural History to prepare for the American public a pictorial history of granite.

This publication, although it covers only 8 pages, has some very fine pictures and drawings. The text is written in simple style so that the average layman may read and understand what granite is, how it is quarried, and the purposes for which it is used. The main thought, both of text and pictures, centers around Barre granite, the world's finest granite.

Copies of the handsome and most interesting publication may be obtained, gratis, from The Barre Guild, Barre, Vermont.

CLUB AND SOCIETY NOTES

Attention Secretaries—If you want your reports to appear in the February issue, they must reach us by January 20th—the Editor.

Mineralogical Society of So. California

Mr. Warren R. Jones, of Sierra Madre, who has recently returned from a six month's mineral collecting expedition into South America, spoke at the October meeting of the Mineralogical Society of Southern California.

His was a fascinating story of a sturdy jeep that was maneuvered over good roads and bad, and over areas where there were almost no roads at all; of rivers forded, and bridges crossed that were obviously and ominously meant only for ox carts; of landslides traversed and landslides just escaped; of swift climbs to heights of over 16,000 ft., and plunges into valleys down precipitous, rainsoaked and very slippery mountain trails. It was the story also of the fast talking driver of this jeep, who, by his knowledge of the minerals he was collecting, by strategic display of authority both real and assumed, and sometimes just by good luck, was able successfully to extricate himself from sometimes trying, sometimes amusing, and sometimes really dangerous situations.

Following the Pan American Highway to Costa Rica where an almost impenetrable jungle marks its end, Mr. Jones traveled by boat into Colombia. After adroit maneuvering and string pulling permission was obtained to visit the Emerald Mines at Muso. A rather hair-raising trip by truck and mule led the way to the mines. Here the emeralds occur in carbonaceous, Cretaceous limestone, in calcite veins. These calcite veins occur irregularly and it is necessary just to dig until such emerald-bearing vein is found. Good specimens were obtained of the emeralds as well as of codazzite and parisite.

The trip then continued on to Bogota over the old cobblestone of the Inca Silver Road into Ecuador. A three day trip by ferry and then on into Peru. Here a paved road, a pleasant novelty, led on to Lima. From here trips were made to the copper and vanadium mines of the region.

At Cerro de Pasco, Peru, specimens of the enargite group of minerals were obtained—enargite, famatinite and luzonite. Then the important vanadium deposits at Mina Ragra, Peru, were visited. Here the vanadium sulphide, patronite, occurs. The pit is 300 feet across and 200 feet deep. Many secondary vanadium minerals and a peculiar nickel-bearing pyrite are found here with which the patronite is associated.

Crossing the Bolivian border, then, a bad road led up to some 14 000 feet and suddenly a deep valley came into view with La Paz located at the bottom. It was a steep and slippery road that wound swiftly down to La Paz, but the trip was worth it for near here are present the most productive lode deposits of tin in the world. Here are the celebrated Araca veins which contain quartz, cassiterite (often beautifully crystallized), and some sulphides. At Llallagua the principal minerals are tourmaline, quartz, arsenopyrite, wolframite, pyrrhotite, siderite and pyrite. The zone of oxidiation is about 1,000 feet deep and below this there is much vivianite, wavellite, vauxite, paravauxite, franckeite and other phosphates.

The Bolivian version of our own famous gremlins guard the mines here and harass who do not keep them well fed. Mr. Jones must have been most generous in his donations to these little creatures for the largest piece of cassiterite in the world was among the many fine mineral specimens he brought back. Discovered in the Patino Mines of Bolivia about seven years ago, this huge chunk of tin ore weighs about 350 pounds.

Many of the beautiful specimens obtained on this trip as well as other fine specimens are now on exhibit at the Los Angeles County Museum, Exposition Park. Dr. Rene' Engel, Curator, is to be complimented on the emphasis he has given to the mineralogical department of the museum.

Pauline A. Saylor
Covina, Calif.

Akron Mineralogical Society

The Society held its October meeting Friday evening, the 24th, at Olin Hall, Akron University.

The Society is fortunate in having as its president, Dr. Paul Acquarone, associate professor of geology and biology at the University.

Some of the many things discussed at the meeting were getting membership cards and buttons for its members and things to be done in the future. Moving pictures were shown about "The Romance of steel making", "Copper mining", and "The mining of nickel".

Mrs. C. R. Violette
393 Reed Ave., Akron, Ohio

Central Iowa Mineral Club

The Central Iowa Mineral Club is going strong and growing every month. Quite a few of the members are getting lapidary equipment set up and we are full of plans for the future. We are meeting now at Drake University; have been promised a permanent place in the new science building (to be started soon).

We held an election at our September meeting and the new officers are: Hubert Ward, President; L. E. Crosman, Vice-President; L. M. Peterson, Treasurer; Mrs. R. G. Hays, Secretary; and Frederick Brown, Consultant.

Ms. R. G. Hays, Secretary
1330-66th St., Des Moines 11, Iowa

Pomona Valley Mineral Club

The October meeting of the Pomona Valley Mineral Club was held in the Chemistry Building of Pomona College. The speaker of the evening was Miss Pauline Saylor who talked on her trip by boat down the Grand Canyon. This expedition was the most recent Norman Nevills has guided down the river. The trip started at Lee's Ferry and was terminated, three weeks later, at Lake Mead. She also told of the disastrous ending of the Brown-Stanton party in 1889, which ended in the deaths of three of their party. She gave an interesting description of the geology of the Canyon and had many fine specimens to show in conjunction with the colored slides and movies which she used to illustrate her lecture.

Mr. Hollis Page then showed films of the most recent eruption of Mauna Loa. This movie was also in color and showed graphically the forces which are at work during a volcanic eruption.

Plans were also announced for the annual dinner meeting to be held in La Verne on November 11.

On Sunday, November 2, 1947, thirty members and friends of the Pomona Valley Mineral Club met at the Pala Mission before going to the Sempe Gem Claim to look for Kunzite. Upon arrival at the mining property, everyone ate lunch under a large live oak. The members were shown through the mine by Mr. George Ashley, who showed the points of interest and explained the methods of tracing down the pockets of gems. Everyone had a fine time exploring the dumps and several pieces of Kunzite were found. Pieces of Lepidolite, Quartz, Mica, and Feldspar found their way into everyone's knapsack, for the mine dumps abound with these minerals. Several nice black Tourmalines were also found. On the way back, stopped at a nearby wash to look for Hornblende.

On Armistice Day, the Club met at Wilson's Diner for their annual banquet. The speaker of the evening was William Sanborn, who showed colored slides of Yellowstone National Park and described the many natural wonders of the park. Mr. Sanborn is a Ranger-Naturalist in Yellowstone and was able to give many interesting sidelights of this area. He described the geysers and hot pools which abound there, as well as giving us a history of the formation of the canyon. He also told of the many wild animals which inhabit the park and had numerous beautiful slides depicting the various types of wild flowers which cover much of the territory. In closing, Mr. Sanborn mentioned that all clubs should do their utmost to discourage the destruction of the wonders of nature, not only in Yellowstone, but in all other national parks as well.

G. W. Weist
Correspondent
Pomona, Calif.

Pacific Mineral Society, Inc.
of Los Angeles, Calif.

Dr. Rene Engle, Curator of Mineralogy and Petrology at the Los Angeles County Museum, gave a very excellent talk on "Geochemistry and Minerals" at the dinner meeting of the Pacific Mineral Society, Inc. on November 14th, 1947. First he spoke of the asthetic approach to mineralogy; of the beautiful and varied colors in many minerals, citing the fact that there is a symphonic composition with the color of minerals as the theme. Dr. Engle feels that every one should have a hobby, preferably an outdoor one, but thinks that mineralogy probably is the best of all, as it takes one away from the worries and troubles of everyday life.

In discussing the progress of mineralogy, he cited the fact that much of it is due to the developments in the other sciences, giving us new tools and methods with which to work. Physics, for instance, has given mineralogy the goniometer, polarizing microscope, the spectroscope, spectrograph, spectrometer, luminescence by ultra-violet, cathodic and X-ray; X-ray technique to determine crystal structure; mass spectrometer by which isotopes are easily recognized, and the electron microscope.

Chemistry has given us the blow-pipe, spot tests, chromatic methods of analysis and other vastly improved ways of chemical examinations.

The last part of Dr. Engle's lecture was on Geochemistry, which concerns the movement, combination and related studies of the elements of the earth. He stressed especially the effect of temperature, pressure and concentration on the development of minerals, and illustrated with a graph how different zones of formation are developed by the gradual change from a molten state of the magma to the cold solid, illustrating this by the temperatures at which Alpha quartz, Beta quartz, tridymite and cristobalite are formed.

Mrs. O. C. Smith
Pub. Chairman

The Chicago Rocks and Minerals Society

The Chicago Rock and Minerals Society held its monthly meeting on Saturday, November 8th, 1947, at the Green Briar Field House. As we entered the meeting room, we were greeted by a great array of specimens displayed on the tables at the back of the room. This was our annual auction. These specimens were donated by members and friends of the Society and were auctioned to the members and guests present at the meeting.

Along with the auction we saw a flim on oil-well drilling which was loaned us by the Shell Oil Company. It was very interesting as it showed how a well is drilled scientifically.

The meeting closed after the auctioneer, Mr. Brentlinger, held the final auction of material which had not been bid on before. There were some wonderful bargains and everybody left feeling much richer than when they came.

Ralph Beach

Rocks and Minerals Club of Woodstock, Vt.

During September, 1947, the functions of our Club seemed to be somewhat uneventful, though we were surprised with a communication from Mr. Peter Zodac. In this letter we learned of Mr. Donal Hurley of Little Falls, N. Y., an authority on the Herkimer quartz crystals of his area. Mr. Hurley is very well acquainted with the quartz localities of this region and wrote us a kind letter to that effect.

Our field trip to the Herkimer region was canceled, however, due to transportation difficulties and we went to the soapstone quarry in Perkinsville, Vt. In the dumps around the water-filled quarries, quantities of perfect small pyrites were located, a few half to three-quarter inch specimens came to light but the soapstone was all of very inferior grade due to weathering.

In a brief visit to the Reading talc mine where a low grade talc is now quarried, an exceptionally interesting occurrence of translucent talc cleavages was discovered.

A new treasurer was appointed to take the place of Mr. John DcDill, who is away to school in Massachusetts.

The club bankbook shows a fine balance which will soon go to procure a showcase for the Club collection.

This month we were privileged to place a small display in the local library. This will be changed monthly and rests in a fine case, the gift of Mr. Lyle Pearsons.

As our policy is to disseminate mineralogical knowledge, we are currently cooperating with the library and the schools in furthering the acquaintance with books and contacts on the subject.

OCTOBER FIELD TRIP

Since spring our last field trip of the season had been scheduled to the Palermo Mine in N. Groton, N. H. When the time arrived for the actual trip, the forest fire epidemic canceled our visit to that rich area of pegmatite.

The second choice was to the garnet mine in Gassets and the talc quarry in Chester, Vt. The luck was definitely on the positive side as this account will show.

The forenoon of Sunday, October 26th, was interestedly spent at the garnet mine delving into the mica-schist. From the cliffs and the fallen material came kyanite xls., hornblende flakes, commercial to semi-gemmy though fractured dark reddish almandite garnet crystals (also massive), particles of chalcopyrite in schist of definite chlorite tendecies, and malachite colorings on the same schist. While at the pit, we viewed the inactive chrusher and secured some of the garnet sand.

By early afternoon our party had adjourned to the talc workings. There near the water-filled quarry and towering derricks, we had an easy time locating good actinolite xls., some interleaved and curiously radiated with white talc, actinolite-asbestos which is so much like its relatives tremolite and serpentine, greenstone nearly to nephrite which we have come to associate so familiarly with Vermont's talc and soapstone deposits, beautiful translucent to opaque specimens of aquamarine to apple-green talc, the baser grey talc, strange foliated grey to brown talc probably associated with pyrophyllite, magnetite in the massive and fine perfect xls., and our old friend the iron pyrites in both xls. and massive character.

Briefly speaking the day was quite successful. As we start our winter program of study, speeches, and displays, we look forward to the '48 season in the field.

Ronald W. Gallup
Club, Advisor, Woodsock, Vt.

Texas Mineral Society
Dallas, Texas

At the regular monthly meeting of the Texas Mineral Society, Tuesday evening, November 11, 1947, Mr. Oscar Monnig, owner of a large Fort Worth Department Store, spoke tothe Society on Meteorites. Mr. Monnig has the largest collection of Meteorites in the Southwest, gathering them by contacting all the inhabitants of the area in which a meteor shower occurs. He passes out pamphlets (on Meteorites) in the area also and then comes back in 6 months or a year and gets the people to looking for them again. The collecting of Meteorites is just as interesting as the collecting of Minerals and Mr. Monnig's talk will make all us rock-hounds start looking closer for Meteorites when we are looking for agates, etc.

The method which Mr. Monnig uses might be put to good use by rock-hounds to a certain degree.

Ralph D. Churchill
2003 Republic Bank Bldg.
Dallas, Texas
Secretary-Treasurer

Mineralogical Society of Springfield, Vt.

The October meeting of the Society was held October 15th in the Universalist Church vestry with 23 present. The chief topic discussed was the "Ferroalloys and their uses in steel." H. L. Chandler, of high school faculty, lectured on the subject and displayed 9 ferrous alloys, including samples of the ores and several of the rare metallic elements. This talk was a sequel to the September meeting at which Mr. Chandler spoke on the "Iron ores and minerals".

The Society's fine display of cut gems, polished specimens, and crystals (300 in all) was displayed at the State Fair in Rutland; it was also on exhibit in a local store window for 2 weeks. This collection will shortly be displayed at Windsor, Vt., to stimulate interest in that town.

Mr. Wyman gave an interesting report on rocks and minerals in Nova Scotia where he recently visited.

Proposed field trips in near future includes So, Newfane, Vt., chrysoprase deposit and Vermont copper mine at So. Strafford, Vt.

H. H. Slade, Secretary

Los Angeles Lapidary Society

Mr. William Sandborn, Geologist, Yellowstone National Park, entertained the Los Angeles Lapidary Society at their October meeting with a splendid lecture of the Yellowstone area. His talk covered locations where mineral collecting could be done in the vicinity outside the Park and also interestingly wove in many little known features of the more remote areas of the Park itself, which are equal in beauty and interest to the most famous spots. Giant geysers and colorful, limpid pools were described and graphically illustrated by excellent color slides.

Mr. Sandborn is a forceful speaker with a pleasing voice and manner and an apparently unlimited fund of interesting information. He told of the world's finest arrowheads screened from a bison jump near the Park where the Indians stampeded the "thundering herd" over the jump using arrows for the "coup de grace". He turned the thoughts of the group to mineral collecting when he spoke of opalized wood standing in forests, untouched and waiting to be found. But when he also told us that no material could be collected in the Park, not even at Specimen Ridge, our thoughts returned to the meeting and the speaker.

On October 18th and 19th the members of L.A.L.S. were guests of the Searles Lake Mineral and Gem Society and participated in several field trips planned by their gracious hosts. These people of the Searles Lake group are fast becoming famous as thoughtful and very hospitable hosts. There were many visiting rockhounds at Trona for those two days. The weather was perfect, the well planned Annual Hobby and Mineral Show and the banquet left nothing to be desired.

THE FACETEERS

Mr. Sam Waagenaar, a diamond cutter from Amsterdam, Holland, described and explained the "Art of Cutting and Polishing a Diamond" to the Faceteers at their October meeting held in the Museum building at Exposition Park. Mr. Waagenaar's diamond cutting experience dates back to his father's, father's, father. He displayed an absolutely flawless diamond which was perfectly cut.

Crystallography and Optics

Mr. Victor Arciniega is instructing a very interested and eager group of thirty amateur facet cutters in "Crystallography and Optics", at the Manual Arts Evening High School located on S. Vermont Avenue, Los Angeles, Calif. The class started September 26th and meets each Friday night from 6:30 p.m. to 10:00 p.m. o'clock.

Mr. Arciniega has prepared the texts for this class especially to cover the means of recognizing and identifying gem materials and the optical requirements for facet cutting such crystals. He is most insistent in his assurance that soon the work will become easy, and while we are anxious that this be true, the beginning is a little "tough".

Most all of the members of the Los Angeles Lapidary Society's Faceteers are in attendance with some members from the faceting group which meets at the R. & B. Artcraft.

Willella Gunderson
Pub. Chm.

Junior Mineral Exchange

The Junior Mineral Exchange, a mineral club for young people up to 17 years of age, has members all over the country. It seeks to make contacts among young collectors for the purpose of exchanging letters and specimens and otherwise to disseminate mineralogical knowledge. There are no dues.

The Club issues occasionally a 4-page Bulletin which is distributed among its members.

All young collectors who may want to join the largest junior club in the country (it now has 80 members) may do so by contacting the Secretary, Jerome Eisenberg, 77 Victoria St., Revere 51, Mass.

North Country Mineralogical Club

About 25 members attended the last all-day field trip of the season on Sunday, September 14th, 1947, when we went to the Cascade Lakes, near Lake Placid, New York. These lakes are interesting geologically, since they were originally one lake. A landslide divided them, about 1830. The location offers rich hunting for mineralogists. The specimens found included blue labradorite, green diopside in calcite, nickeliferous pyrite, and a rare combination of black garnet with calcite.

The September meeting of the Club was held on Thursday evening, September 25th. The speaker was Miss Helen Hale, librarian of the Plattsburgh Public Library. She told about the "Gulf", a glacial plunge pool with high falls, located at Covey Hill, on the Canadian border near Ellenburg, N. Y. Those present at the meeting, after hearing Miss Hale's description of it, expressed a desire to hold a field trip to the location at some future date.

The program for our October meeting was made up of an exhibit by the members of minerals collected during the summer. These included "watermelon" tourmaline; "agates" made in test tubes; casts and molds of dinosaur footprints made in the Triassic sandstone of the Connecticut River valley; jasper from Milton, Vt.; quartz crystals from Bar Harbor, Maine; granite from Barre, Vermont; mica crystals from Iowa; hornblende from the Tilly Foster mine, near Brewster, New York; "books" of mica crystals from Portland, Connecticut; a trilobite fossil from the Mississippi River valley; quartz "diamonds" from Middleville, New York; a combination of diopside, calcite and graphite found near Willsboro, New York; and magnetite, one of the valuable Adirondack iron ores. During the program, each member told a little about the specimens, exhibited.

Gertrude E. Cone

Newark Mineralogical Society

The first meeting of the fall season was held Sunday afternoon, October 5th, 1947, at 3:00 P.M., in the Science Department of the Newark Museum, Newark, N. J.

Although competing with sunny skies and a world-series ball game, the meeting was well attended. The subject of the meeting was "Summer Collecting" and two tables were covered with specimens. Members told of their experiences collecting in the north-east states.

Dr. A. C. Hawkins led the Society on an outing to Sayreville, N. J., on October 26th. Iridescent pyrite, pyrite nodules, marcasite and amber were secured.

The 251st regular and 31st annual meeting of the Society was held Sunday afternoon, November 2nd, 1947, at 3:00 P.M., at its regular meeting room in the Science Department of the Newark Museum. Meeting was well attended by members and friends.

Mr. Wesley Hayes, president, presided; Mr. Louis Reamer, secretary, read the minutes of previous meeting, Mrs. I. Bemis was kept busy as treasurer, also Mr. Paul Kellinghausen as vice-president. The foregoing officers were re-elected for another year.

Committees will be appointed by the president at the December meeting.

Mr. Albert White told of plans for an outing to be taken by the Society to an old iron mine in northern New Jersey sometime in November.

As advertised, the meeting was taken over by members who brought in rare or unusual minerals and gave talks on them.

Mr. John Albanese had the largest display with specimens of a collection probably a hundred years old.

Mrs. Sherlock told of her summer collecting at a Jasper mine; showed specimens and distributed them.

Mr. Albert White showed his collection of marcasite spear heads which he collected a week before on the Society's outing to Sayreville.

Mr. Leonard Morgan as usual had a good display, pyrite nodules, amber and pyrite spear heads and cockscombs.

Mr. George Werner, Jr., exhibited two large specimens from Franklin, N. J., and asked help in identifying them.

Mr. Edwin Skidmore gave the members a treat in viewing some unknown crystals in matrix that fluorcesed blue; also a box of fluorescent cabochons under ultra violet light.

Mr. Gene Vitali gave an interesting story of seeing a very unusual mineral high up on the wall of a cliff and after weeks of study as to how to possess it, well, when he held it up, all agreed that it was well worth the effort.

Mr. Wesley Hayes and Mr. Paul Kellinghausen also gave short talks.

Mr. Herman E. Grote having procured some window glass that had turned amethyst color from the rays of the sun, told of his doubt this could be possible.

Herman E. Grote
Publicity Chairman

Los Angeles Mineralogical Society

The LAMS held their regular November meeting in the Premiere Cafeteria, 3716 Wilshire Blvd., Los Angeles, at 6:30 P.M. Thursday, November 20th, with President Frank F. Larkin in the Chair. Secretary Maude E. Wheeler assisting.

After a very pleasant dinner the usual business was quickly disposed of, and in the absence of Past President Wm. Harriman who was unable to be present to make the scheduled talk on "Romance of Gold Mining", B. Gordon Funk gave us a fine discussion of "Sillimanite minerals". This talk was based upon an article which Mr. Funk wrote for *The Mineralogist* magazine in its April, 1940 issue which was the "John Melhase Memorial Number". Gordon very kindly loaned this magazine to the writer for notes, and I must say the article is written in a thorough and scholarly manner. All of the Sillimanite minerals are discussed therein, including Andalusite, Sillimanite, Kyanite, Dumortierite, and the artificial mineral Mullite.

Gordon is an ardent collector and his activity in locating and visiting various localities is well known to his many friends. He discussed many localities, notably those found in Southern California, and particularly the Champion Sillimanite Company's holdings in the White Mountains in Mono County, California. This is an unusually large andalusite deposit, said to be Pre-Cambrian, by its discoverer, A. Knopf. Another famous deposit mentioned by Mr. Funk, is that near Dehesa, one mile South of Alpine on Highway 80 to Circular Water Cistern, turn right 100 yards to a faint turn-off point jutting out into the canyon; the dump is found on the canyon side of this point. Sounds uncertain to me, but that is the way with many of these localities. Experienced rock hounds finally acquire a sixth sense which leads them unerringly to their desired destinations.

Mr. Funk exhibited some nice specimens of these minerals, as well as some choice Rutile specimens. Those interested in such minerals should get a copy of the magazine referred to for the complete article.

Until further notice in the bulletin, the meeting place will be he same as shown above. A nice room on the mezzanine floor provides seclusion from the other guests.

John A. Quinn, Publicity Chairman
1090 No. Marengo Ave.,
Pasadena 3, Calif.

New York Mineralogical Club

American Museum of Natural History, New York, Wednesday, October 15, 1947.

The first Fall meeting of the club is customarily devoted to the collecting experience of its members during the preceding summer. At this meeting fifteen members delivered interesting talks on their activities which extended from Maine to Brazil, and many interesting specimens were displayed. Some collectors who happened to strike it rich, brought in a supply of minerals for distribution to other members.

Two publications were available for distribution to members; "The Romance of Nickel" published by the International Nickel Company, brought in by Mr. Sampter and "The History of Granite" by F. H. Pough. Dr. Pough called the club's attention to "Burrlees Crystal Models" a complete set of plastic models costing 20c each.

Dean E. H. Kraus of the University of Michigan was present and spoke briefly to the club.

Mr. Boyle had an interesting report on tantalum carbide. He saw specimens of this new abrasive which closely resembled some mineral specimens which were labeled native tantalum from the Urals. After investigation he found that Goldschmidt in 1926 had shown that this mineral was a compound of tantalum, a tantalum carbide. Mr. Boyle wrote to Dr. Frondel and when the seventh edition of Dana's *System of Mineralogy* is revised this will be corrected.

Mr. and Mrs. Sampter had an interesting summer collecting in New England and New Jersey where they visited 22 different quarries mostly in pegmatites and acquired a number of fine specimens.

Dr. Hawkins visited the Battery tunnel several times and collected good specimens of sillimanite, kyanite and garnet. The prize specimen was a garnet crystal about two inches in diameter which he donated to the Club's collection of minerals from New York City.

Mr. L. Morgan collected at Haddam Neck, Conn., where he found pink beryl, tourmaline, allanite and spinel. He also built himself a polishing outfit on which he polished many of the specimens he collected this summer and previously. He also visited Prospect Park, New Jersey, where he found stilbite and quartz casts after anhydrite. At the trap rock quarry at Westfield, Mass., he collected datolite and babingtonite in very good crystals.

Mr. Cosminsky collected at Amelia, Va., where he found the usual Amelia minerals and also plates of mica with apatite embedded in them. At High Cliff, Maryland, he collected fine specimens of gypsum in rosettes, fins and crystals many of which he brought in for distribution.

Mr. Marshall collected essonite from Redding, Conn., zoned quartz crystals from Samford Springs and uranium minerals from near Charleston, N. H.

Mr. Grahl visited the Battery tunnel where he found sillimanite, kyanite and small modified crystals of apatite. He also collected lignite and pyrite from Glen Cove, L. I.

Mr. Lisle collected some very nice tourmaline after some hard work splitting a boulder at the Battery tunnel.

Mr. Northup had the most spectacular exhibit of minerals, which he acquired during a stay in Brazil. They were all beautiful specimens and included clear, asteriated rose quartz, clear green tourmaline, a combination crystal of hiddenite and kunzite, a deeply etched clear spodumene crystal, a specimen of morganite, very dark amethyst, and some brilliant large hematite crystals some of which were twinned.

Mr. Pribil collected some nice essonite crystals from Redding, Conn.

Miss Waite was very active this past summer visiting many localities in New Hampshire among which were South Stratford, where she collected blue beryl, clevelandite and autunite; the Madison Silver mine where galena and sphalerite were collected, and the Palermo mine where golden beryl, aquamarine and autunite were found.

Dr. O'Connell, spent the summer mapping the Londonderry Quadrangle in Vermont where he found pyrite crystals. He also called attention to an elementary lapidary course to be offered at City College in the adult education branch in the near future.

Mr. Hauze described a group of aquamarine crystals from the Wardwell quarry, Maine, on which he has been working. The beryl occurs in massive quartz and consists of three crystals 30 inches, 14 inches, and 6 inches long, the 14 inch crystal being about 1½ inches in diameter. This group has been photographed in color and the slides will be shown to the Club at a later date.

Mr. Waller Morgan found the mineral gladite, a lead copper bismuth sulfide, at Bedford, N. Y. It had not been previously reported from this locality.

Mr. McKown visited several localities. At Franklin, N. J., he collected vesuvianite, norbergite, graphite and jasper. At Paterson, N. J., quartz casts after anhydrite and calcite which fluoresced green around the edges were found. Gummite and uraninite were obtained at Grafton, N. H., and from Hudson, N. Y., phosphorescent selenite was collected.

Mr. Yedlin announced that a field trip would be held very shortly and that notices would go out to all members.

The meeting was adjourned at 9:30 P.M. to permit those present to examine the specimens on display.

Purfield Kent, Secretary

Field Trip of The Georgia Mineral Society

On Saturday, November 8, 1947, the Georgia Mineral Society sponsored a very successful field trip to the Talc Mining area near Chatsworth, Ga. In spite of the weather the attendance was exceptionally good and a full day of collecting was enjoyed by all.

Members gathered at the Georgia School of Technology, in Atlanta, and, ably led by Mr. Teague, chairman of the Field Trip Committee proceeded to Chatsworth, by auto. All of us had our fingers crossed because of recent storms in this area, however the roads to the mines were in excellent condition with minor exceptions, a few fallen trees were noted but had been cleared away, and we were able to drive almost to the prospects.

The south entrance of the Fort Mountain mine was visited. The party entered this mine and collected very fine specimens of white Dolomite enclosing the beautiful sea green foliated Talc. The geology of the workings were discussed and explained in one of the underground rooms. Dr. Furcron and Mr. Teague both were kept busy answering questions and directing the party through the mine. The party then proceeded to visit the west entrance of this mine where some fine specimens of pencil grade Talc were collected.

After leaving the Fort Mountain mine the party assembled on the highway and ate lunch, then proceeded to visit other prospects and ending at the Cohutta Mountain Talc Mine, which is the largest operating mine of any kind in Georgia at the present.

Some of the minerals collected were Picrolite, Actinolite, Serpentine (a jet black variety), Anthophyllite, several varieties of Talc and associated minerals.

Members attending were Mr. Teague, Dr. Furcron, Dr. Navarre and Messrs. John Boyles, J. H. Connor, H. L. Peterson, and S. C. Knox, Mr. and Mrs. Gusso, Mr. and Mrs. Stein, Student members attending were Louis Partain, Tommy Jessup, Charles Tidwell and O. B. Yancey.

The following are the new officers of the Society elected at the Annual Banquet held at the Georgia School of Technology; President, Dr. A. S. Furcron; Treasurer, Mr. Sam P. Cronheim; and Secretary, Mr. Charles Wilkins.

S. C. Knox
Corresponding Secretary
2142 Memorial Drive, S.E.
Atlanta, Ga.

New Haven Mineral Club

From what was said after, the following experiment went over big at the meeting of the club, November 10, 1947, at New Haven, Conn.

The question was asked—Why is biotite black, as iron rust is red?

Well, this is one of the great problems of the chemical physicists, and lucky for the members, the speaker, Mr. E. M. Marshall, knew a little about it. Linus Pauling, one of the big men at the Calif. Inst. of Tech., in his address of acceptance of the Wm. Richards Medal for 1947, spoke about his contributions to quantum mechanics, valence theory, crystal structure, electron diffraction and the large problems of atomic structure still unsolved.

A problem he mentioned is the difference in color of the same element in two valence states. There are many instances of this, but for us as mineral hounds, the most interesing is the ferrous and ferric states.

Mr. Marshall's experiment about biotite explained little except showing that ferrous and ferric iron are both present in many black minerals.

1. Solution of melanterite, (ferrous sulfate).
2. Solution of ferric chloride.
3. Solution of sodium hydrate (any lye, or household ammonia.)
4. Ordinary peroxide of hydrogen.

The solutions are made with boiled water to expel oxygen from it. Into test tubes, A.B.D. pour some sol. No. 1; into tubes B and C some sol. No. 2. Now add the lye solution to all tubes The precipitate in A is the whitish ferrous, B is the black ferrous-ferric complex that exists in biotite and black tourmaline, tube C is the usual red iron oxide color; tube D is the same as A, by adding a few drops of hydrogen peroxide to it the ferrous iron is oxidised to ferric shown by the change to the red of the latter.

The Club loved it as the black formation is quite unexpected and therefore spectacular.

Praise for Rocks and Minerals

Editor R. & M.:

With pleasure and praise for a truly wonderful magazine, I am sending in $3.00 to renew my subscription for another year. During the course of the one year of which I subscribed for *Rocks and Minerals,* I found it to be both an informative and interesting publication.

Daniel Black
Brooklyn, N. Y.

November 3, 1947

Publication on the Geology and Mineral Resources of Virginia: by Arthur Bevan.

This is Circular 6 and contains an annotated list of the publications of the Virginia Geological Survey and lists of other important publications on the geology and mineral resources of the state. (58 pages).

Issued by the Virginia Geological Survey, Box 1428, University Station, Charlottesville, Va.

FLUORESCENT CAIRO CALCITE

A wonderful new discovery of a different **FLUORESCENT MINERAL FROM NEAR CAIRO, ILLINOIS.**

10 pound lots $1.00 per pound at Cairo, Illinois, you pay transportation, Illinois buyers pay extra 2%.

SPECIMENS, extra, fine, **$2.00** to **$100.00** at Cairo, Illinois.

NOTE: West Coast buyers can secure Cairo Calcite from Ultra-Violet Products, 5205 Santa Monica Boulevard, Los Angeles 27, California.

Add to your fluorescent minerals. Can furnish fluorescents from A to Z. (Adamite to Zircons and all kinds), many new types from Mexico, Canada and Illinois-Kentucky district.

SEND FOR FLUORESCENT PRICE LIST. **IT IS FREE.**

We are in the market for fluorescents in large amounts.

FAIN WHITE KING

2700 WASHINGTON AVE. CAIRO, ILLINOIS

PHOSGENITE

One of the feature attractions at our recent exhibition was the selection of phosgenites from the famous locality at Monteponi, Sardinia. Exhibited were part of a lot we received from one of the largest university museums in Italy. This lot represented some of the finest specimens of phosgenite seen in this country for many, many years. The crystals are large and excellent, many being transparent. You will be delighted with the quality of these phosgenites and we have a very fine selection to offer. Each specimen will carry its original label. This is your opportunity to secure a really fine phosgenite. Our supply cannot last long. Sizes from 1" to 2½" are priced at $5.00; $7.50; $10.00; $15.00; $20.00; $25.00 and $35.00 each. Prices entirely depend on quality rather than size.

ANGLESITE

Also from Monteponi, Sardinia, is a selection of choice anglesite specimens that we are pleased to offer. These consist of sharp terminated crystals on matrix, many of which are transparent. Original museum labels will accompany each specimen, as this lot is also from one of the largest university museums in Italy. Our supply is limited and we suggest you order your specimen at once. Sizes from 1" to 3" and are priced at $4.00; $5.00; $7.50; $10.00 and $12.50 each. Prices entirely depend on quality rather than size.

ESTWING PROSPECTOR'S PICKS

Every mineral collector and student of geology needs a good prospector's pick. An Estwing Prospector's Pick is the finest obtainable. We offer for immediate delivery.

Estwing Prospector's Pick highly polished . . . $3.25 plus postage for 3 pounds

Estwing Prospector's Pick black finish . . . . $3.00 plus postage for 3 pounds

A NEW MINERALIGHT

As distributors for the entire line of MINERALIGHT fluorescent lamps, we are pleased to offer their newest and lowest priced MINERALIGHT. This new model H MINERALIGHT is small in size but B I G in performance. Simply plug it in an ordinary light socket for 110 volt A. C. current and get the surprise of your life!

The fluorescent reaction is equal to what is obtained with the larger MINERALIGHTS except on a smaller scale. At last, there is a low priced fluorescent lamp that will produce the beautiful reds in Franklin, N. J., calcites, the bright blues of scheelite and hydrozincite, the brilliant yellows of calcium-larsenite in addition to a great many other specimens. In short, you will obtain outstanding results from this inexpensive, compact and lightweight NEW MINERALIGHT. The low price brings this NEW MINERALIGHT within reach of all!

ONLY $12.50 POSTPAID

SEND FOR YOUR MODEL H MINERALIGHT TODAY

We carry the complete line of MINERALIGHTS in stock at all times.
Send for illustrated literature.

SCHORTMANN'S MINERALS

6 AND 10 McKINLEY AVENUE **EASTHAMPTON, MASSACHUSETTS**

The New

WARD-COLOR SLIDES

For the Mineral Collector

Now for the first time, you may obtain beautiful 2 x 2 Ward-Color Slides of the famous Harvard Minerals.

Rare Collection

Recognized as the world's outstanding university collection, the Harvard Mineral Collection contains ideal mineralogical examples, many of which came from localities now exhausted.

New Ward-Color

Photographed by Ward's in natural color and reproduced as 2 x 2 color slides, here is your opportunity to obtain color slides of the most beautiful minerals to be found anywhere. The outstanding quality of these minerals is beyond description. They represent a truly magnificent series. The slides come with a description and script which enhances their value even more. No one can buy any of these invaluable specimens, but now you can "add" the famous Harvard Minerals to your collection as Ward-Color Slides, expertly photographed in their full natural color.

Write For Details

Please write for descriptive listings and complete details of this series available only through Ward's.

WARD-COLOR SLIDES

of Showy Minerals

For the Collector with an Eye for Beauty

Ward-Color Slides of the most beautiful showy minerals selected from Ward's own mineral stock. The complete set contains ten slides which are representative of the showiest minerals bought and sold by Ward's. Write for information of this show piece series today.

LISTING CONTINUALLY EXPANDING

Ward's listing of mineral slides is continually expanding. Why not write us requesting this information be sent you as it is available.

WARD'S *Natural Science Establishment*

P. O. Box 24, Beechwood Station Rochester 9, New York